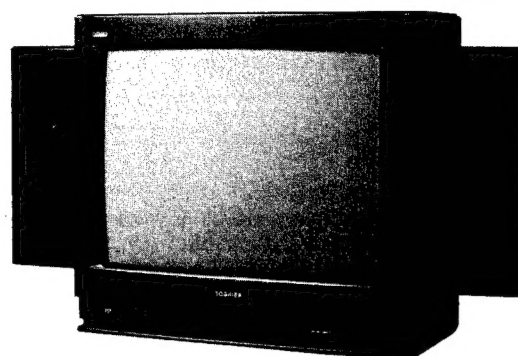


TOSHIBA

COLOUR TELEVISION

218S9F



SPECIFICATIONS

Input Power Rating :	88 watts, AC 220 volts, 50 Hz
Aerial Input Impedance :	75 ohm unbalanced type for VHF and UHF
Receiving Channels :	SECAM-L Standard : VHF channels B to C, 1 to 6, B to Q (70 to 86) UHF channels 21 to 69 PAL B/G Standard, SECAM B/G Standard : VHF channels 2 to 4, 5 to 12 and S1 to S20 UHF channels 21 to 69 PAL I Standard : UHF channels 21 to 68 PAL, D/K, SECAM D/K Standard : VHF channels 1 to 12 UHF channels 21 to 69 PAL, SECAM 50 Hz/60 Hz (For Video Disk playback) 4.43NTSC (For VCR playback), NTSC (3.58 MHz) (Video mode only)
Intermediate Frequencies :	Picture I-F carrier frequency : B/G, D/K..... 32.7MHz(VH,U) 37.4MHz(VL) L, I 32.7MHz Sound I-F Carrier Frequency: L..... 39.2MHz B/G 38.2MHz(VH,U) 31.9MHz(VL) D/K..... 39.2MHz(VH,U) 30.9MHz(VL) I..... 38.7MHz
Picture Tube :	21 inches, A51EBV12X01, 510 mm (measured on diagonal of viewable picture area), 90° deflection
Sound Output :	10.0 watts (at 10% harmonic distortion) × 2, Max. 15 watts × 2
Speakers :	100 mm round 2 pcs, 40 mm round 2 pcs
Aux. Terminals :	Headphone Jack, 21 pin socket, S-VIDEO/AUDIO socket, AV OUTPUT socket, External speaker terminal
Dimensions :	Height 481 mm Width 773 mm Depth 484 mm
Weight :	26 kg

Specifications are subject to change without notice.

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. The E.H.T. must be checked every time the receiver is serviced to ensure that the C.R.T. does not emit X-ray radiation as result of excessive E.H.T. voltage. The nominal E.H.T. for this receiver is 27.5 kV at zero beam current (minimum brightness) operating at 220V a.c. The maximum E.H.T. voltage permissible in any operating circumstances must not exceed 29.0 kV. When checking the E.H.T., use the 'High Voltage Check' procedure in this manual using an accurate E.H.T. voltmeter.
2. The only source of X-RAY radiation in this receiver is the C.R.T. To prevent X-ray radiation, the replacement C.R.T. must be identical to the original fitted as specified in the Parts List.
3. Some components used in this receiver have safety related characteristics preventing the C.R.T. from emitting X-ray radiation.
For continued safety, replacement component should only be made after referring the Product Safety Notice below.

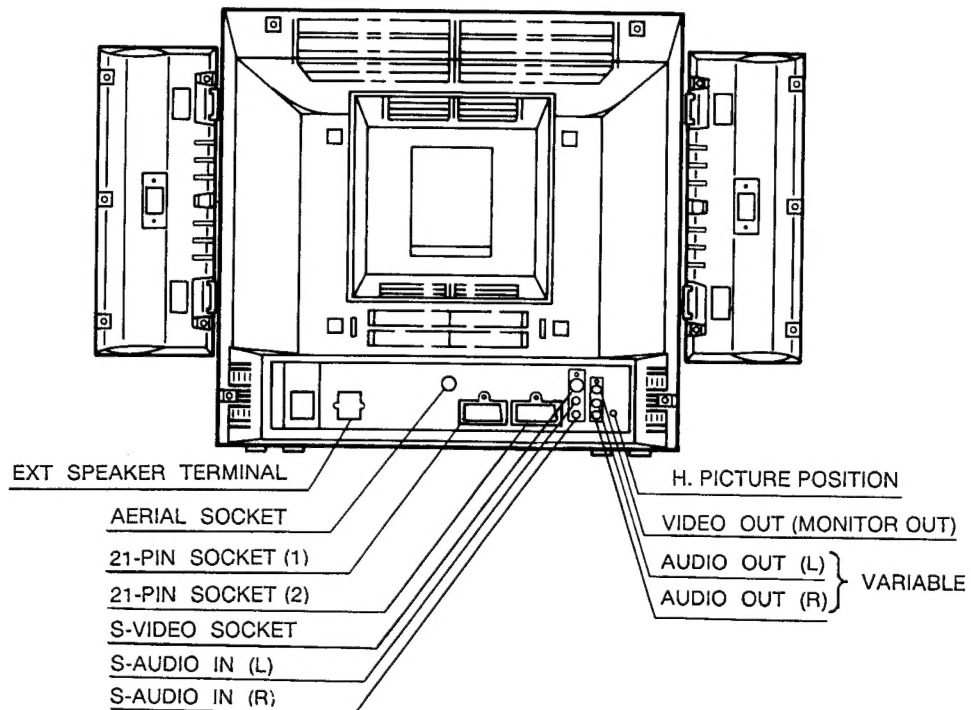
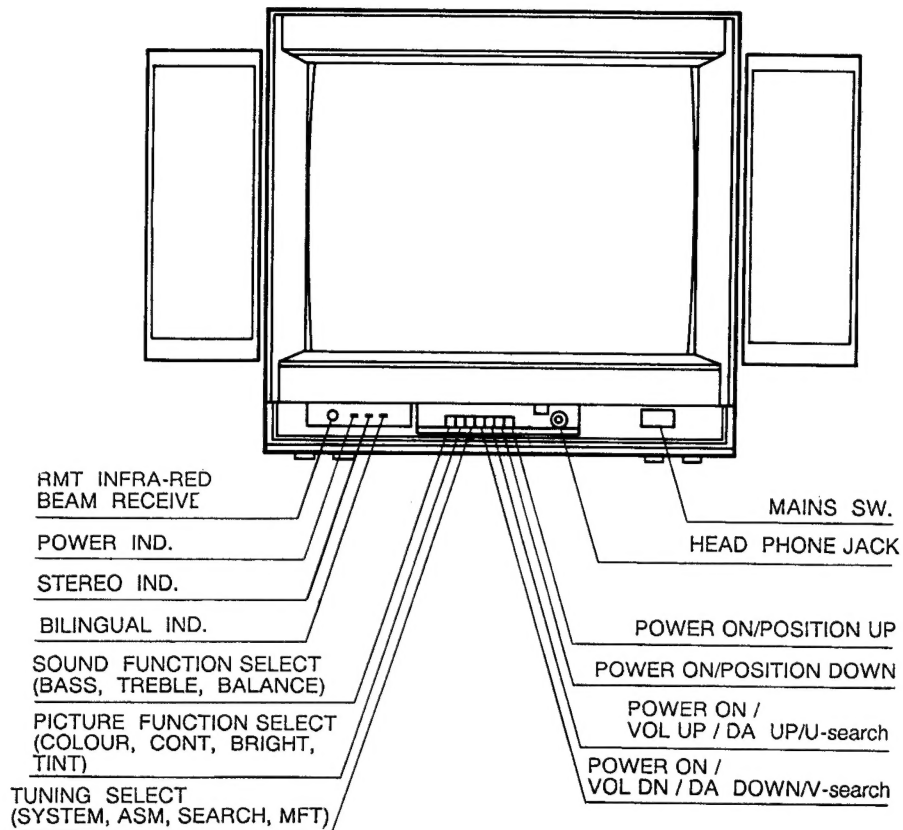
SAFETY PRECAUTION

1. This receiver has a nominal working E.H.T. voltage of 25.0 kV. Extreme caution should be exercised when working on the receiver with the back removed.
Do not attempt to service this receiver if you are not conversant with the precautions and procedures for working on high voltage equipment.
When handling or working on the C.R.T., always discharge the anode to the receiver chassis before removing the anode cap
The C.R.T., if broken, will violently expel glass fragments. Use shatter proof goggles and take extreme care while handling.
Do not hold the C.R.T. by the neck as this is a very dangerous practice.
2. It is essential that to maintain the safety of the customer all cable forms be replaced exactly as supplied from factory.
3. A small part of the chassis used in this receiver is, when operating, at approximately half mains potential at all times. It is therefore essential in the interest of safety that when serving or connecting any test equipment the receiver should be supplied via a suitable isolating transformer of adequate rating.
4. Replace blown fuses within the receiver with the fuse specified in the parts list.
5. When replacing wires or components to terminals or tags, wind the leads around the terminal before soldering. When replacing safety components identified by the international hazard symbols on the circuit diagram and parts list, it must be a Toshiba approved type and must be mounted as the original.
6. Keep wires away from high temperature components.

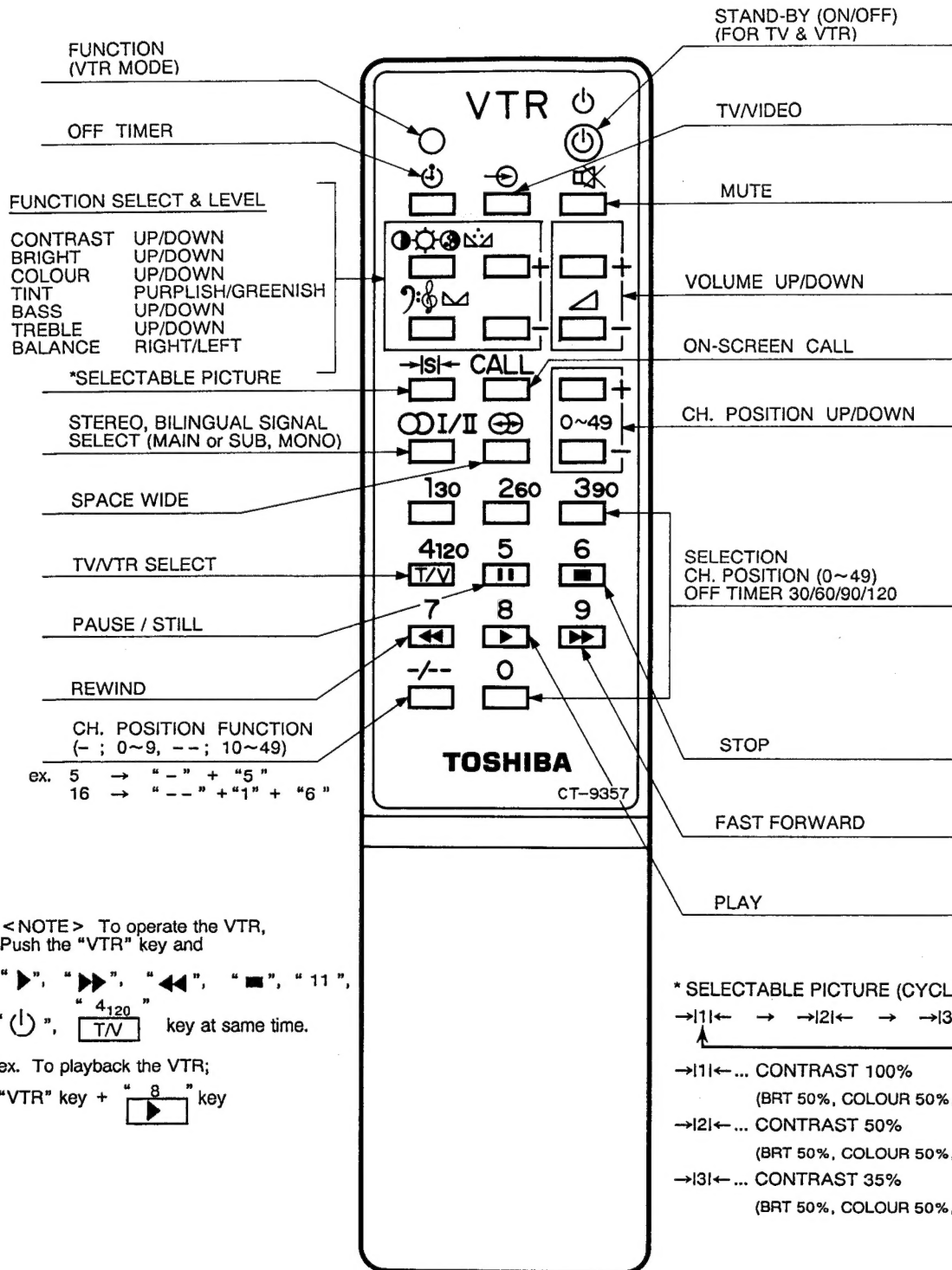
PRODUCT SAFETY NOTICE

Many electrical and mechanical components in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-ray radiation protection afforded by them cannot necessarily be obtained by using replacements rated at higher voltages or wattage, etc. Components which have these special safety characteristics in this manual and its supplements are identified by the international hazard symbols on the schematic diagram and parts list. Before replacing any of these components read the parts list in this manual carefully. Substitute replacement components which do not have the same safety characteristics as specified in the parts list may create X-ray radiation.

FRONT CONTROLS AND REAR VIEWS



REMOTE HAND HELD UNIT



WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

INSTALLATION AND SERVICE ADJUSTMENTS

GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the receiver is operated.

This receiver is shipped completely in cardboard carton. Carefully draw out the receiver from the carton and remove all packing materials.

Plug the power cord into a convenient 220 volts 50 Hz AC two pin power outlet. Turn the receiver ON. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain natural colour or B/W picture.

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary, providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power to the receiver is switched ON. If the set is moved or faced in a different direction, the power switch must be switched off at least one hour in order that the automatic degaussing circuit operates properly. Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2 m before disconnecting it from AC source. If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures.

+120 VOLT POWER SUPPLY ADJUSTMENT (R851)

CAUTION: +B voltage closely relates to the high voltage. To prevent hazardous X-RAY RADIATION, the +B voltage must be properly adjusted to +120 volts.

1. Tune in an active channel. Adjust the BRIGHTNESS and CONTRAST Controls for normal picture.
2. Check that the AC power Line voltage is normal. (AC 220 volts, 50 Hz)
3. Connect a frequency counter to pin 3 and pin 4 (Ground) of Q807.
4. Adjust R852 for 20 kHz reading on the counter.
5. Remove the counter, and short R860 (connector side) to the ground.
6. Connect a digital voltmeter to both leads of C833.
7. Adjust R851 for 120V reading on the meter.
8. Remove the shorting on R860.

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST Controls to minimum (zero beam current).
3. High voltage will be measured below 29.0 kV.
4. Rotate the BRIGHTNESS Control to both extremes to be sure the high voltage does not exceed the limit of 29.0 kV under any conditions.

HEIGHT ADJUSTMENT

1. Receive the WG PHILIPS pattern, and set the contrast and colour to minimum, and the brightness to centre.
2. Change the VERT POSITION SW (S301) so the round shape in the pattern is located in the centre of screen.
3. HEIGHT Control (R351) changes the size of the picture or pattern, having an equal effect on the top and bottom. Make final adjustment to overscan the mask 2 cm at top and bottom.

HORIZONTAL CENTRE ADJUSTMENT

1. Receive the WG PHILIPS pattern.
2. Set the contrast and colour to minimum, and the brightness to centre.
3. Adjust H. CENTRE USER Control (R452) to the click (centre) position.
4. Adjust H. CENTRE SUB Control (R451) so the pattern centre can be located at the screen centre.

FOCUS ADJUSTMENT

Adjust FOCUS Control on FLYBACK TRANS.(T461) for well defined scanning lines in the centre area on the screen.

BELL COIL (LM01) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Connect the synchroscope to the terminal pin 2 of LM01.
3. Adjust LM01 for the flat level of amplitude in each colour bar waveform on the scope. (See figure 1.)

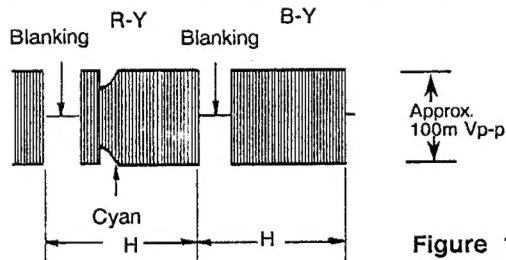


Figure 1.

IDENT COIL (LM04) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Connect the DC voltmeter (Digital Voltmeter) to the pin 23 of IC501.
3. Adjust LM04 for the maximum indication (approx. DC10V) on the meter.

B-Y, R-Y DEMOD COIL (LM02, LM03) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Set the COLOUR, BRIGHTNESS and CONTRAST Controls free.
3. Connect the synchroscope to the pin 62 of IC501.
4. Adjust LM02 so that the white level in picture part reaches to the vertical retrace line. (See figure 2.)
5. Then change the connection of synchroscope from the pin 62 to the pin 60 of IC501.
6. Adjust LM03 so that the white level in picture part reaches to the vertical retrace line. (See figure 3.)

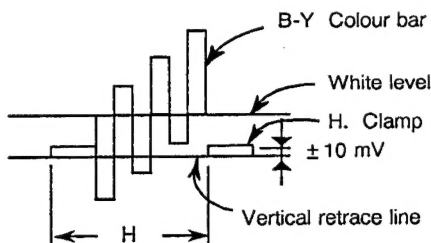


Figure 2.

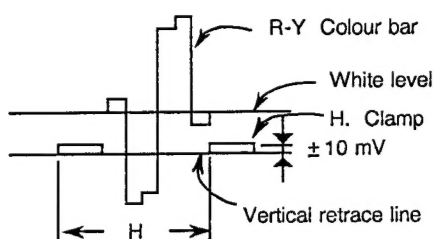


Figure 3.

PAL MATRIX ADJUSTMENT

1. Tune in the colour programme of the Philips pattern.
2. Set the COLOUR Control to obtain the proper colour.
3. If the PAL MATRIX adjustment is incorrect, the Venetian Blind would appear in the colour bars area. This case needs the adjustment.
4. At the first, adjust DL PHASE ADJ. Coil (L551) to minimize the Venetian Blind.
5. Next adjust 1H-DL ADJ. VR (R551) to minimize the Blind.
6. If the Venetian Blind still remains, adjust 1H-DL PHASE ADJ. Coil (L551) to minimize the Blind again.
7. Repeat the item 5 and 6 procedures, adjust the R551 and L551 until the Blind does not appear.

CRT GREY SCALE ADJUSTMENT

1. Tune in an active channel.
2. Turn the SCREEN Control (on T461) fully counter-clockwise.
3. By rotating the RED, GREEN and BLUE CUT OFF Controls (R557, R558, R559) to the mid position.
4. Set the GREEN and BLUE DRIVE Controls (R252, R253) to the 90 degree position from the max position rotating counterclockwise.
5. Set the SERVICE SW. (S202) in the H. line position.
6. Set the CONTRAST, COLOUR Controls to minimum and BRIGHTNESS Control to centre position.
7. Rotate the SCREEN Control gradually clockwise until the first line appears slightly on the screen. Set the SCREEN Control to this position.
8. Adjust the CUT OFF Controls to obtain the slightly lighted horizontal lines in the same levels of three colours (RED, GREEN and BLUE). The lines may look like white if the CUT OFF Controls are adjusted properly.
9. Return the SERVICE SW. (S202) in the receiving position.
10. Set the BRIGHTNESS Control to the maximum and COLOUR Control to the minimum.
11. Adjust the BLUE and GREEN DRIVE Controls (R252/R253) to obtain proper white-balanced picture in high light areas.
12. Set the BRIGHTNESS and CONTRAST Controls to obtain dark grey raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the CUT OFF Controls and DRIVE Controls to obtain a good white balance in both low and high light areas.

SUB-BRIGHTNESS ADJUSTMENT

1. Tune in a colour programme.
2. Set the CONTRAST Control to the maximum and the BRIGHTNESS Control to the centre.
3. Set the COLOUR Control to the minimum.
4. Set the SUB-BRIGHT. Control (R255) to the centre and leave the receiver for five minutes in this state.
5. Watching the picture well, adjust the SUB-BRIGHT. Control in the position where the picture does not show evidence of blooming in high bright area and not appear too dark in low bright portion.
6. Check the proper picture variation by rotating the CONTRAST and BRIGHTNESS Controls to both extremes.
7. If the picture does not appear dark with the CONTRAST and BRIGHTNESS Controls turned to the minimum, or not appear bright with the controls turned to the maximum, adjust the SUB-BRIGHT. Control again for the acceptable picture.

PICTURE I-F SWEEP ALIGNMENT

GENERAL..... Refer to figure 4 for test equipment connection.

PRELIMINARY STEPS 1. Supply +12 volts to the Main Board.
2. Short the pin 1 of IC101 to ground.

SWEEP/MARKER GENERATOR..... Connect to the point ① as shown in figure 4 on the Main Board.
Set to 30 ~ 40 MHz sweep with signal level of 75 ~ 85 dB μ .

OSCILLOSCOPE..... Connect to pin 1 IC101 on the Main Board through the detector.

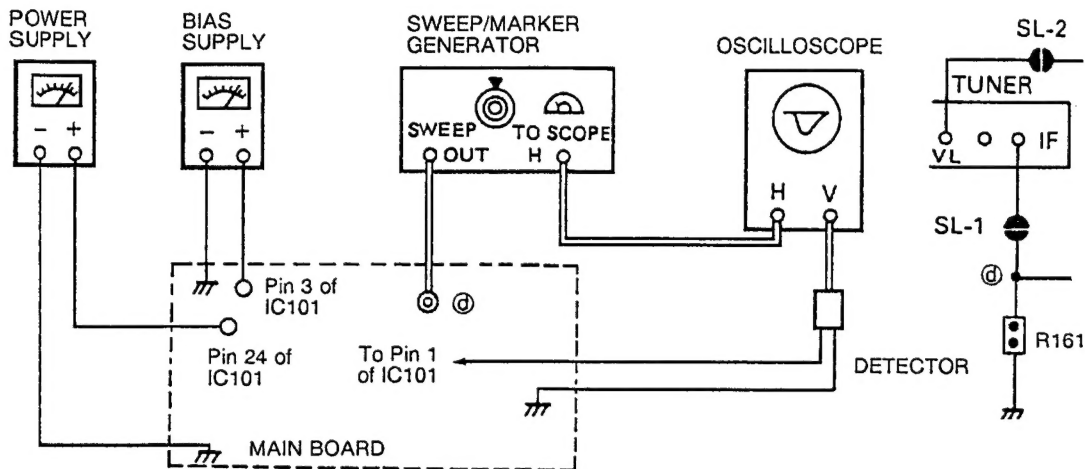


Figure 4. Picture IF Sweep Alignment

STEP	SWEEP/MARGER GENERATOR	ADJUST	REMARKS
1. Detector Coil	37.4 MHz Marker "ON"	L151	<ul style="list-style-type: none"> Short the collector of QN08 on the Main Board to ground. Supply +2 to +3 volts to pin 3 of IC101 to set the output level for 0.4 Vp-p on the scope. Adjust L151 so that the marker position (37.4 MHz) on the response can lower to minimum. (See figure 5.) Remove the short of the collector of QN08. After completing CN51 adjustment, repeat this step again.
2. Detector Capacitor	32.7 MHz Marker "ON"	CN51	<ul style="list-style-type: none"> Short the base of QN08 to ground. Supply +2 to +3 volts to pin 3 of IC101 to set the detection output for 0.4 Vp-p on the scope. Adjust CN51 so that the marker position (32.7 MHz) on the response can lower to minimum. (See figure 5.) Remove the short of base of QN08. After completing L151 adjustment, repeat the step again.
After completing the above steps, disconnect the equipment and re-solder the links on the Main Board, and adjust the AGC Delay control (R151) following DELAYED RF AGC ADJUSTMENTS.			



Figure 5. Magnified Response Curve

AFC ALIGNMENT

- GENERAL Refer to figure 6 for test equipment connection.
- PRELIMINARY STEPS 1. Disconnect the solder links on the foil side of the Main Board.
 2. Supply +12 volts to the Main Board. (See figure 6.)
 3. Short the pin 29 to ground.
 4. Turn AGC DELAY Control (R153) on the Main Board fully clockwise.
- DVM..... Connect to the resistor R125 (© in figure 6) and ground.

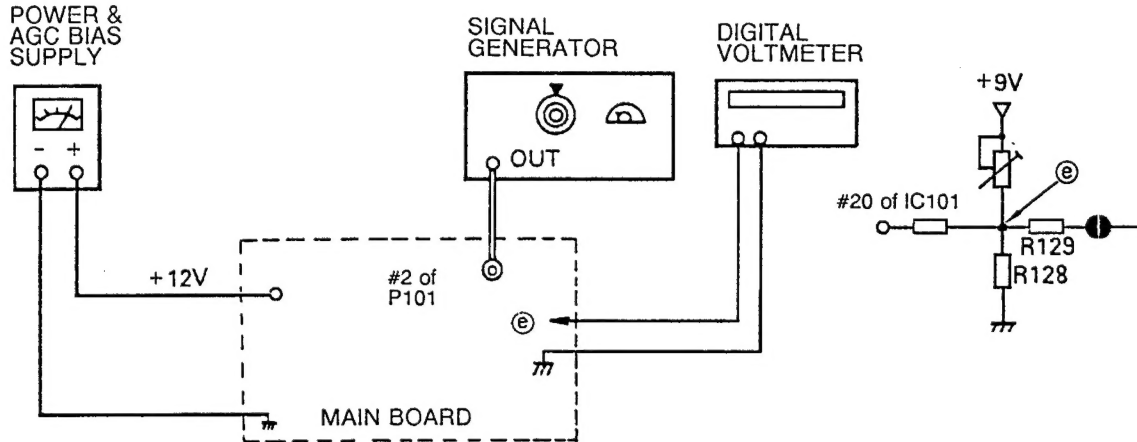


Figure 6. AFC Alignment

STEP	SIGNAL GENERATOR	ADJUST	REMARKS
1. AFC Balance (R153)	NO SIGNAL	R153	<ul style="list-style-type: none"> Short the pin 3 of IC101 to ground. Adjust R153 for 4.5 volts at the point © in figure 6.
2. AFC Coil (L152)	37.4 MHz CARRIER WAVE (Level : 75 to 85 dBμ)	L152	<ul style="list-style-type: none"> Remove the short of pin 3 of IC101. Short the collector of QN08 to ground. Connect IF carrier wave to the pin 2 of P101 in figure 6. Adjust L152 for 5.4 volts on the meter at the point ©. After completing L153 adjustment, repeat this step again.
3. AFC Capacitor (L153)	32.7 MHz CARRIER WAVE (Level : 75 to 85 dBμ)	L153	<ul style="list-style-type: none"> Remove the short of collector of QN08. Connect IF carrier wave to the pin 2 of P101 in figure 6. Adjust L153 for 5.4 volts on the meter at the point ©. After completing L152 adjustment repeat this step again.

SECAM DET-OUT & SOUND IF ALIGNMENT

L SECAM DET-OUT (R152) ADJUSTMENT

1. Unsolder the solder link SL-1 to disconnect.
2. Supply +12 V to the Main Board.
3. Short the base of QN12 to ground, and the base of QN08 to ground.
4. Set AGC to Self AGC condition. (Pin 3 of IC101)
5. Connect synchroscope to the emitter of Q103 through 10:1 probe.
6. Connect the 2-signal generator to IF input, and set up the generator as described below.
 - IF frequency : 32.7 MHz
 - Signal level : 75 to 85 dB μ
 - Video modulation
 - Positive modulation : 97%
 - Video signal fH : 15.625 kHz
 - Picture : Pattern with 100% white
7. Adjust the AC LEVEL Control (R152) for 2.0Vp-p on the scope.

SIF CONVERTER (L662) ADJUSTMENT

1. Short pin 7 of IC601 to ground.
2. Connect SIF generator to the base of Q660 through 0.01 μ F capacitor.
3. Connect the oscilloscope to the output side of Z666.
4. Set up the SIF generator as described below.
 - Sound carrier frequency : 5.5 MHz
 - Modulation frequency : 1000 Hz
 - Frequency deviation : ± 15 kHz
 - Signal level : 100 dB μ (50 ohm load)
5. Adjust L662 for the maximum response on scope.

MPX ALIGNMENT

STEP	ADJUSTING PARTS	INPUT TERMINAL	OUTPUT TERMINAL	TEST SIGNAL	PROCEDURE
1	54.7 kHz PILOT ADJ. (LG01)	PIN 21 (QG01)	Pin 19 (QG01)	Pilot Signal Input level: 100mVp-p f = 54.69 kHz	<ol style="list-style-type: none"> 1. Arrange the signal as described left. 2. Connect oscilloscope to pin 19 of ICG01. 3. Adjust LG01 for the maximum amplitude of 54.69 kHz element.
2	STEREO SEPARATION (RG51)	Aerial	PIN 2 (ICG01)	ON AIR SIGNAL S1: fm = 1 kHz $\Delta f = \pm 15$ kHz S2: fm = 1 kHz $\Delta f = \pm 30$ kHz LEFT CH.: No modulation INPUT LEVEL: 80 to 100dB μ	<ol style="list-style-type: none"> 1. Receive ON-AIR stereo signal. 2. Connect oscilloscope to pin 2 of QG01. 3. Adjust RG51 for the minimum amplitude of 1 kHz element

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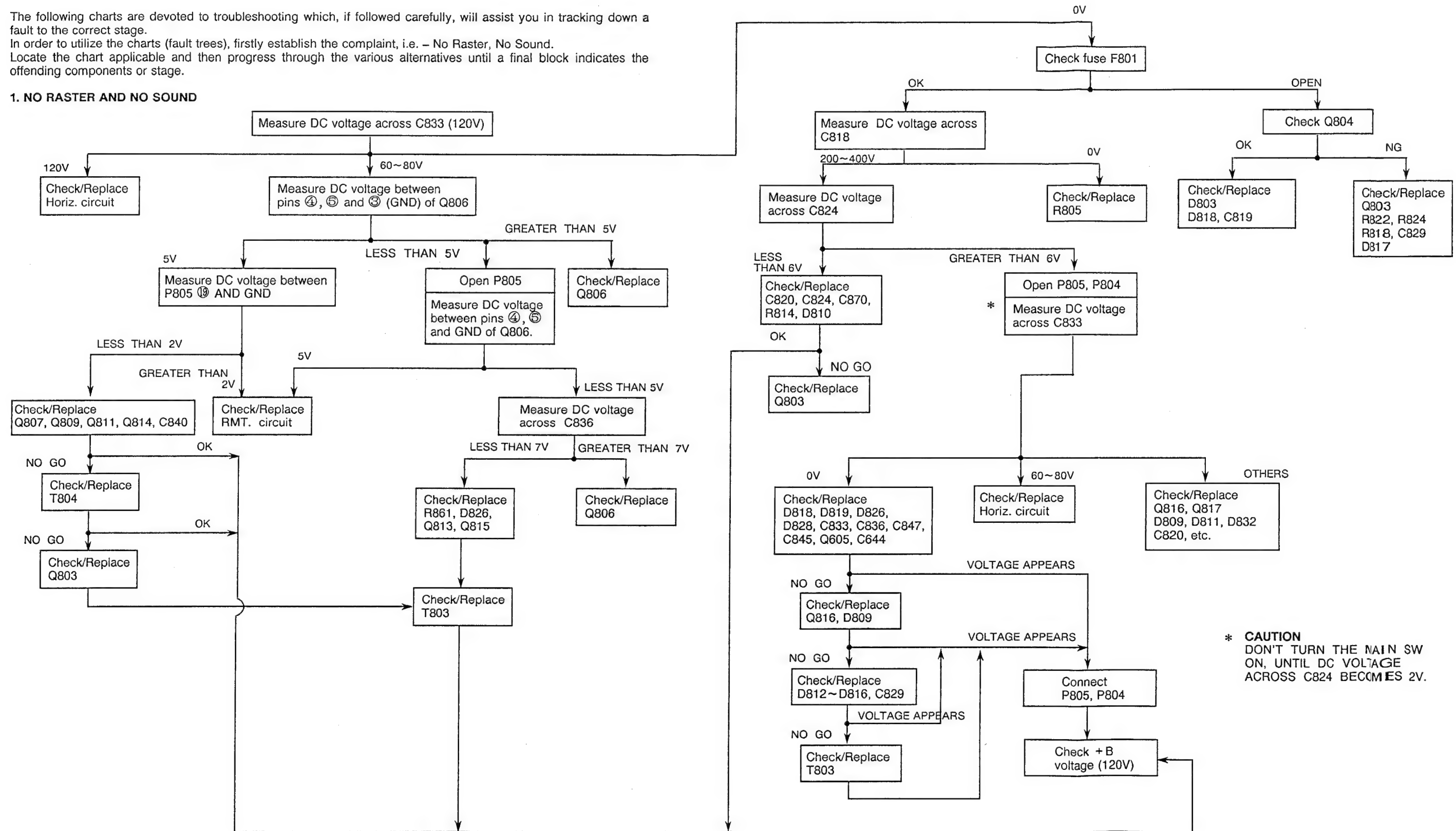
TROUBLESHOOTING CHARTS

The following charts are devoted to troubleshooting which, if followed carefully, will assist you in tracking down a fault to the correct stage.

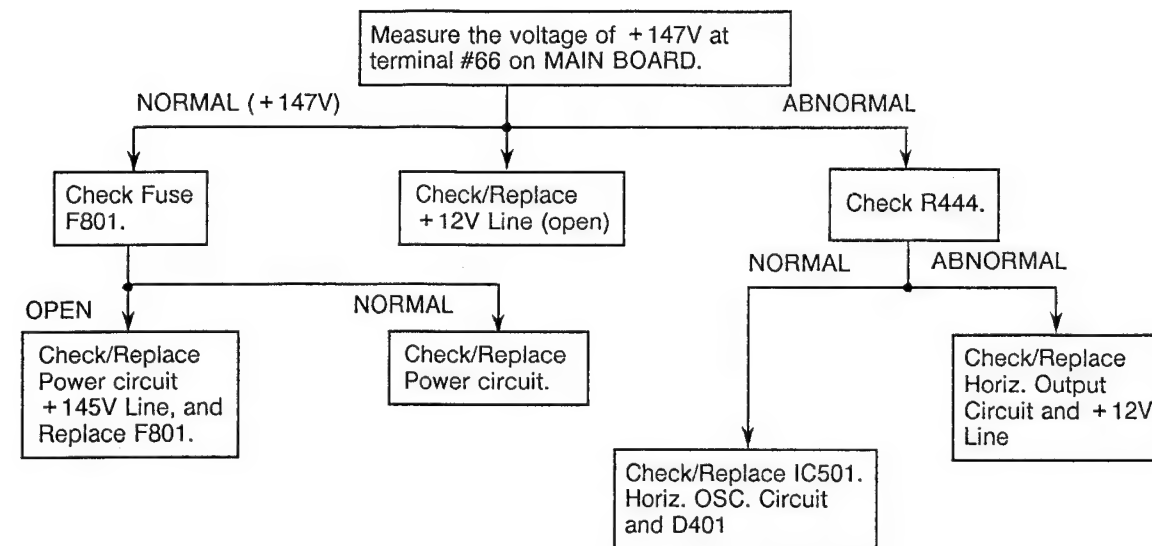
In order to utilize the charts (fault trees), firstly establish the complaint, i.e. – No Raster, No Sound.

Locate the chart applicable and then progress through the various alternatives until a final block indicates the offending components or stage.

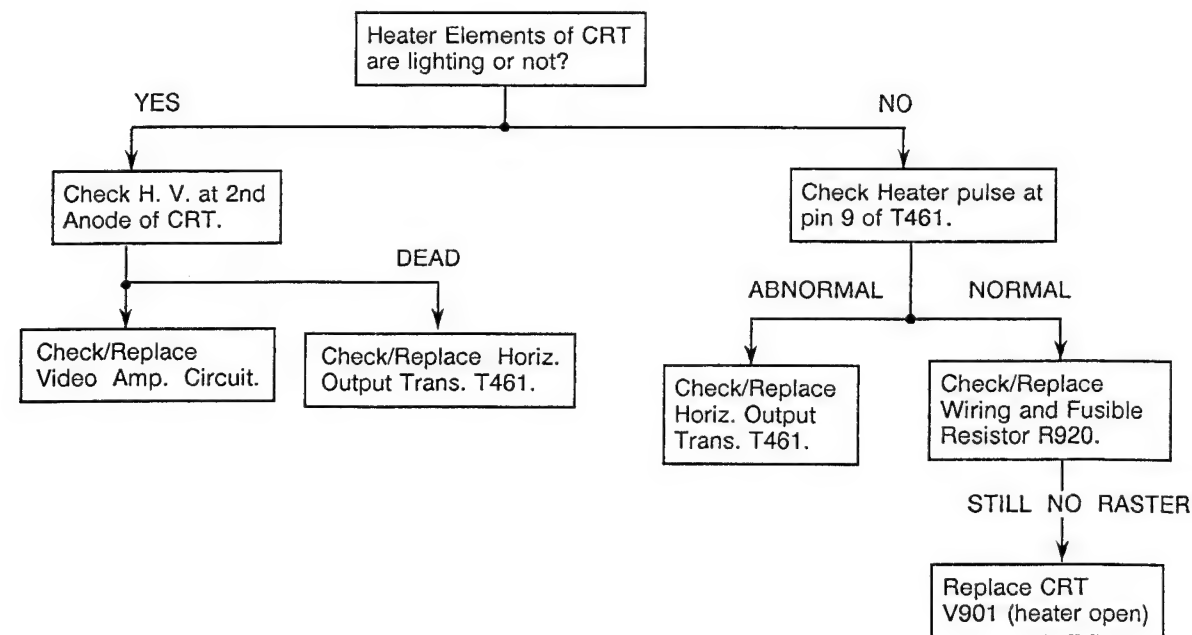
1. NO RASTER AND NO SOUND



2. NO RASTER (NOISE OR WEAK SOUND)

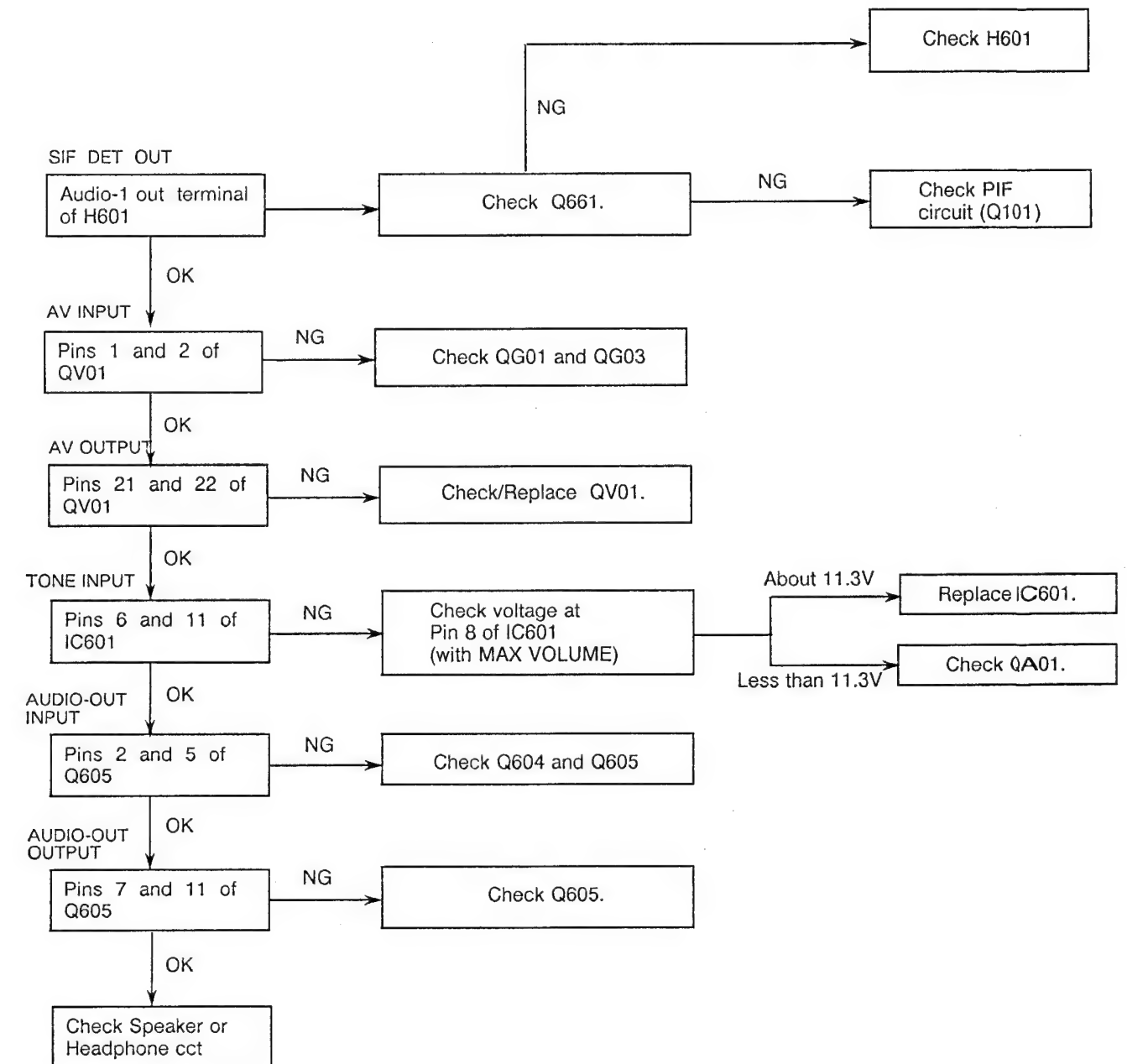


3. NO RASTER (SOUND OK)



4. NO SOUND

Note: Check the sound signal waveform for shaded area below.



5. NO PICTURE

Check video signal waveform for shaded area below.

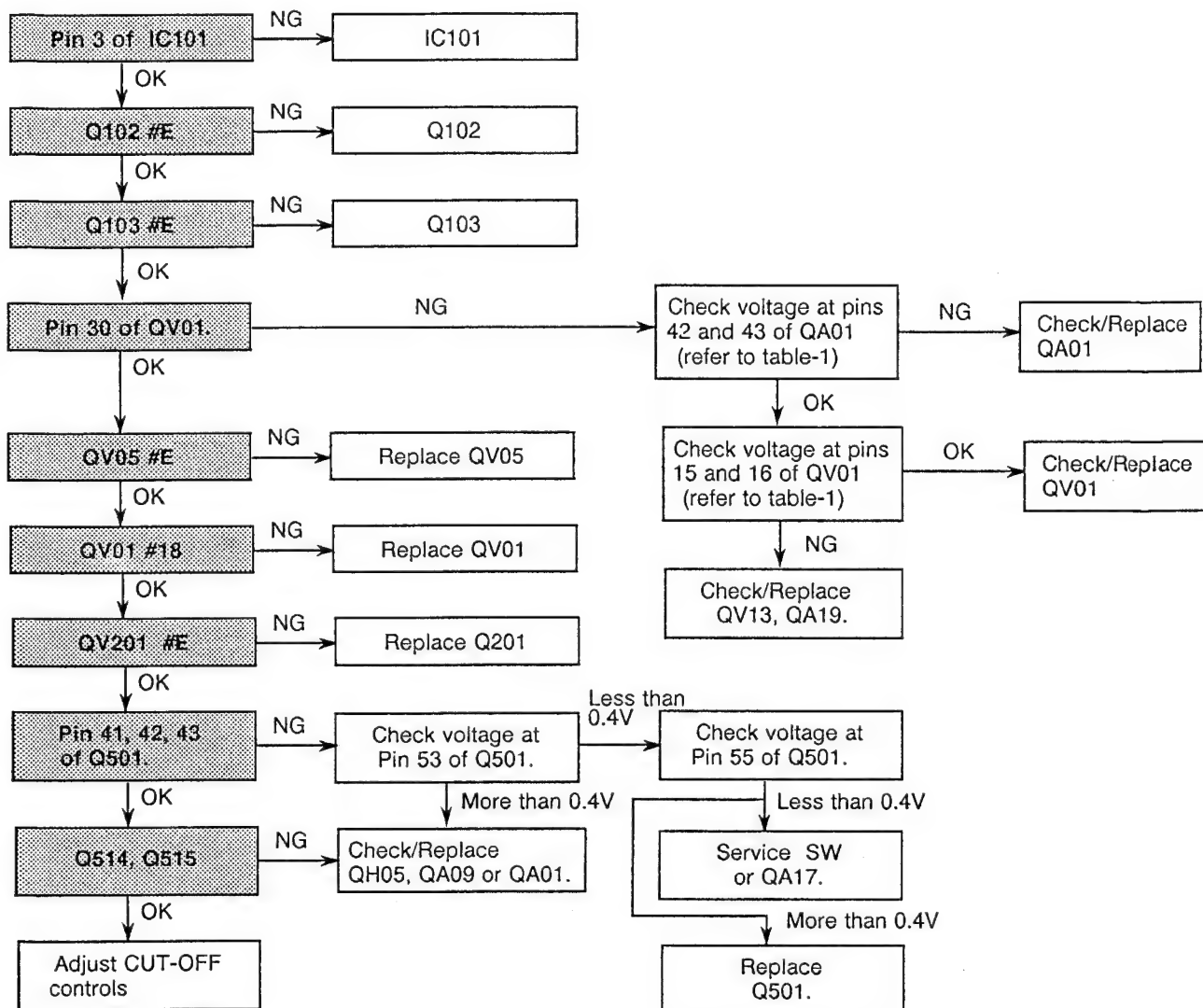


Table-1 (A/V SW. LOGIC)

MODE	QA01		QV01	
	Pin 43	Pin 42	Pin 15	Pin 16
TV	*H	*H	*H	*H
VIDEO-1	H	L	H	L
VIDEO-2	L	L	L	L
VIDEO-3	L	H	L	H

L : Less than 2.5V
H : More than 2.5V

Note: * marks denote as follows.

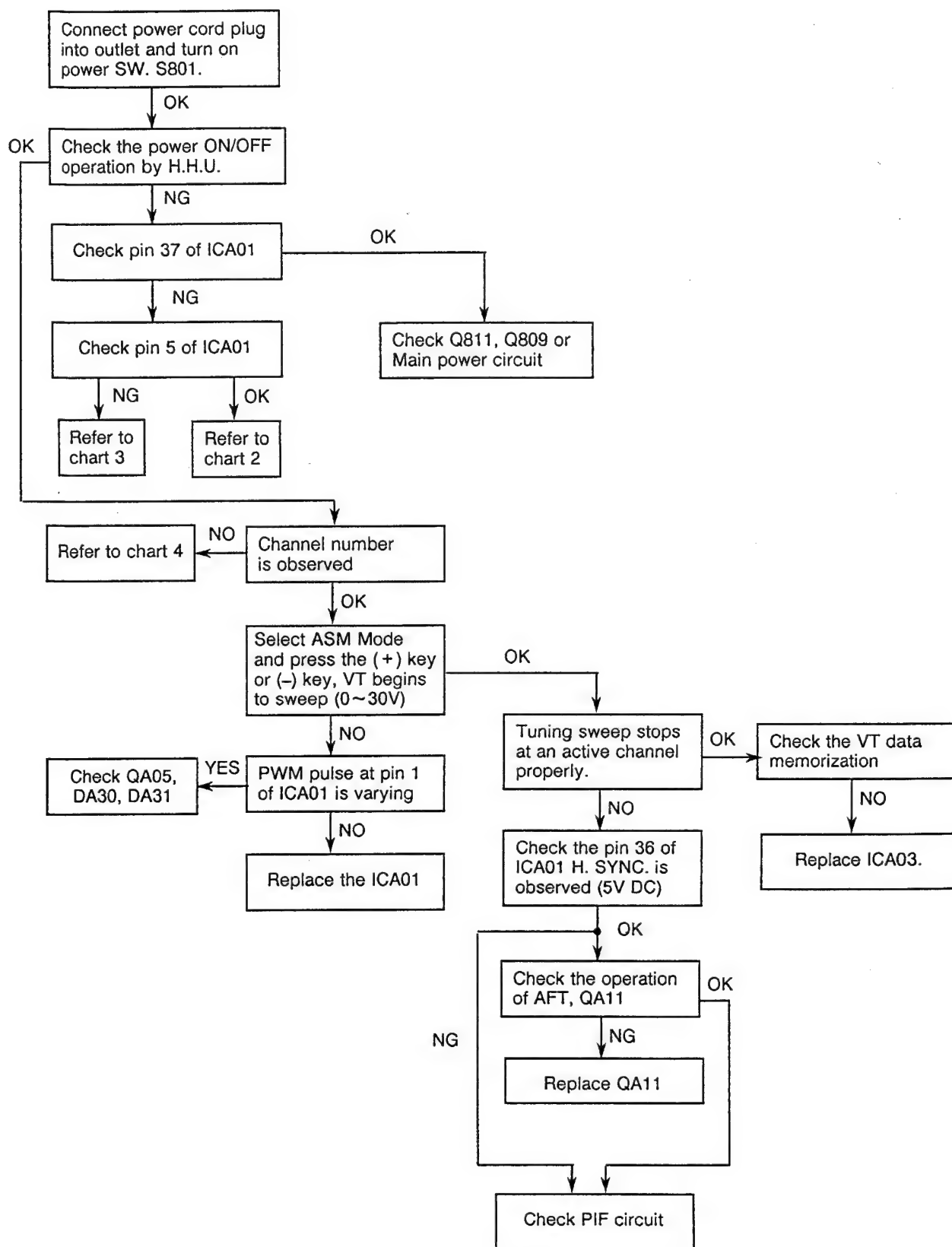
AV SW LOGIC is same as VIDEO-1 mode when pin 8 of 21 PIN-1 is high level.

AV SW LOGIC is same as VIDEO-2 mode when pin 8 of 21 PIN-1 is high level.

AV SW LOGIC is same as VIDEO-1 mode when pin 8 of 21 PIN-1 and 21 PIN-2 are high level.

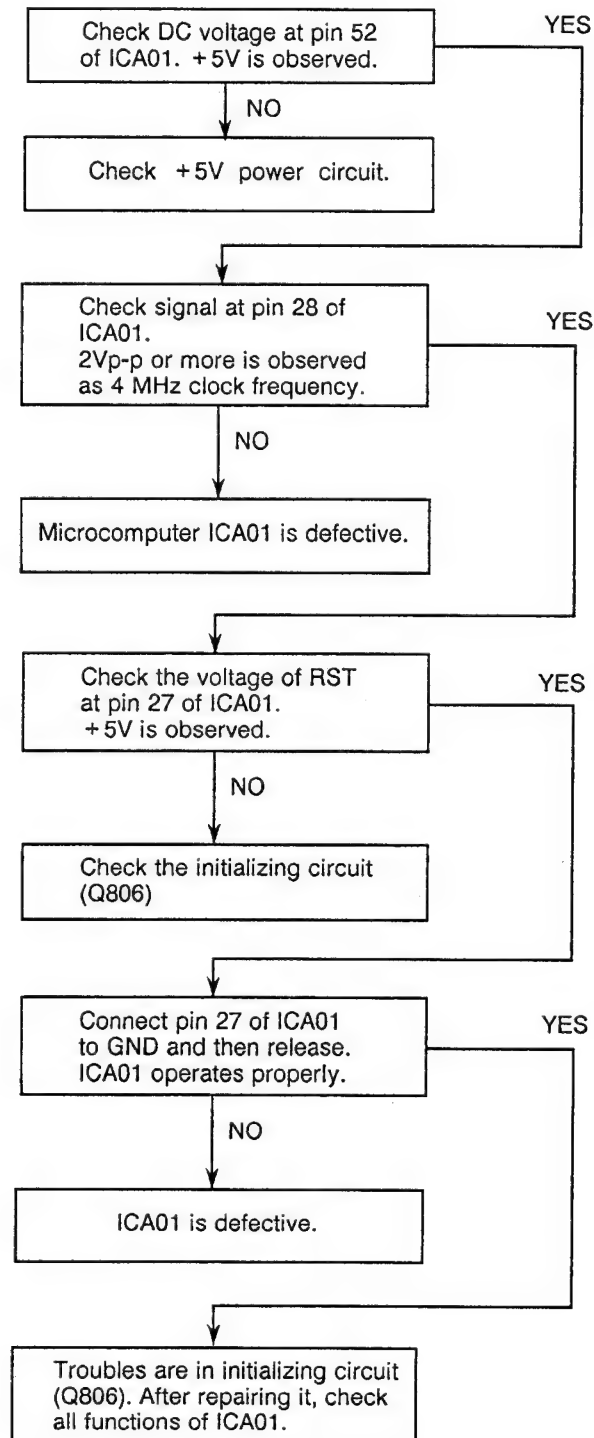
6. CHANNEL SELECTOR TROUBLE

[CHART 1]



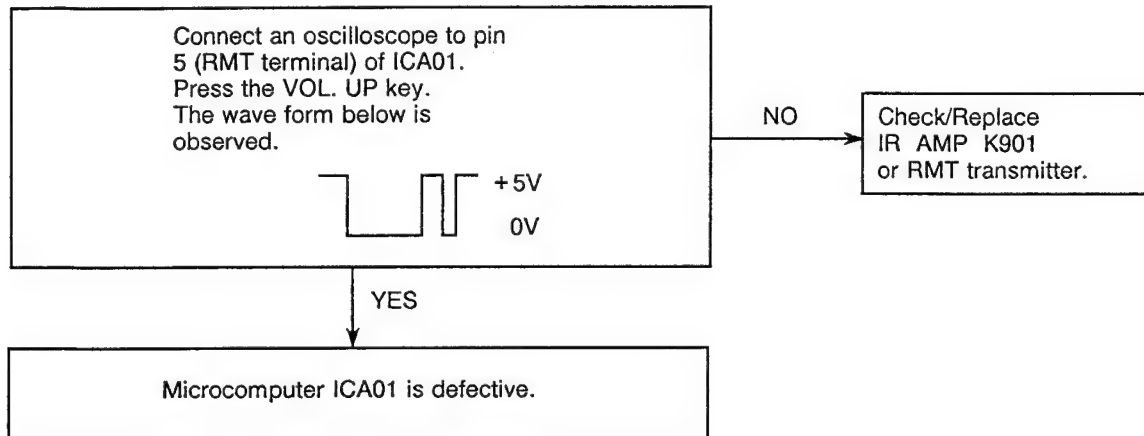
[CHART 2] Microcomputer (ICA01) Operation Check

NOTE: Before checking Microcomputer, check that control buttons and their connection work properly.

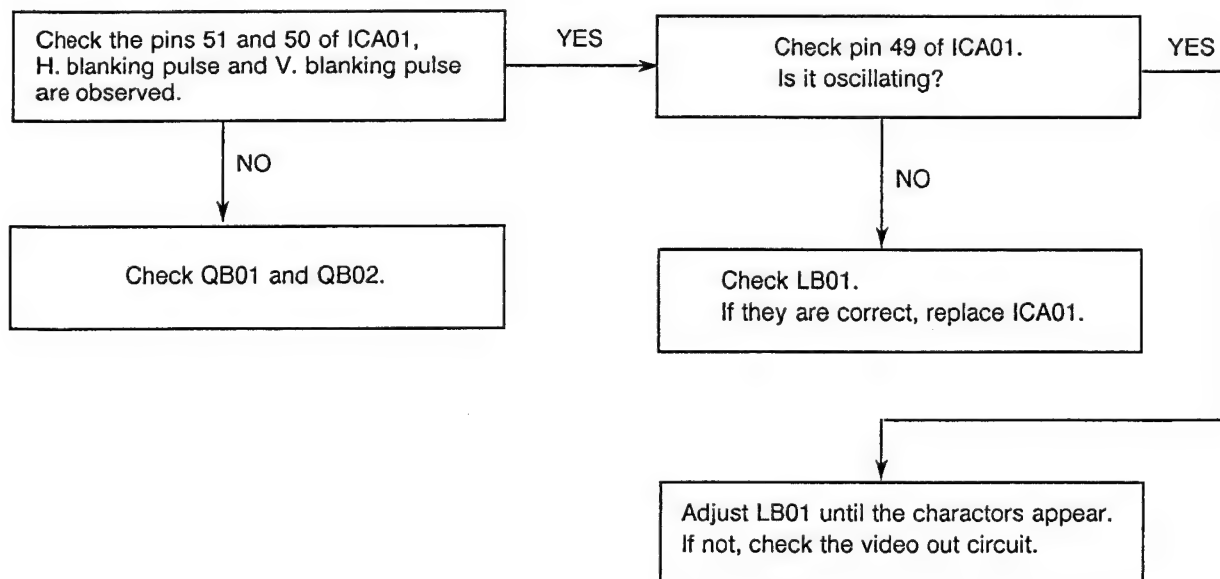


[CHART 3] Remote Control Operation Check

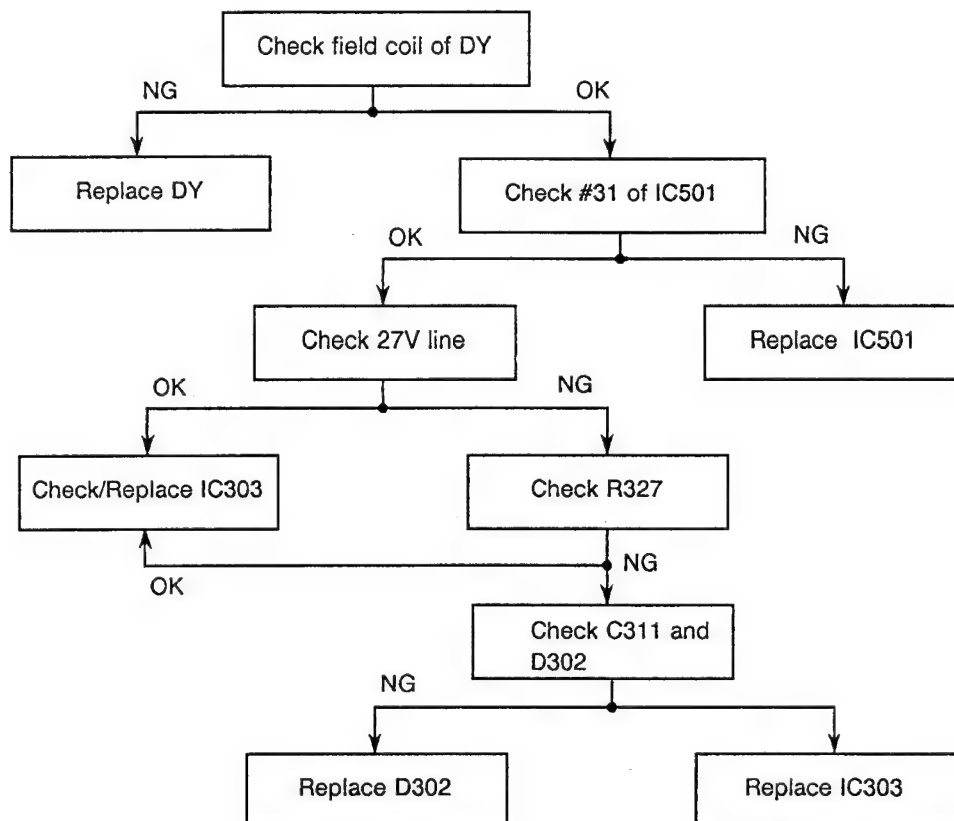
Note : Before checking RMT operation, check that key operation on TV set is proper.



[CHART 4] On Screen Display Operation Check



7. NO VERT. SCAN (ONE HORIZ. LINE RASTER)



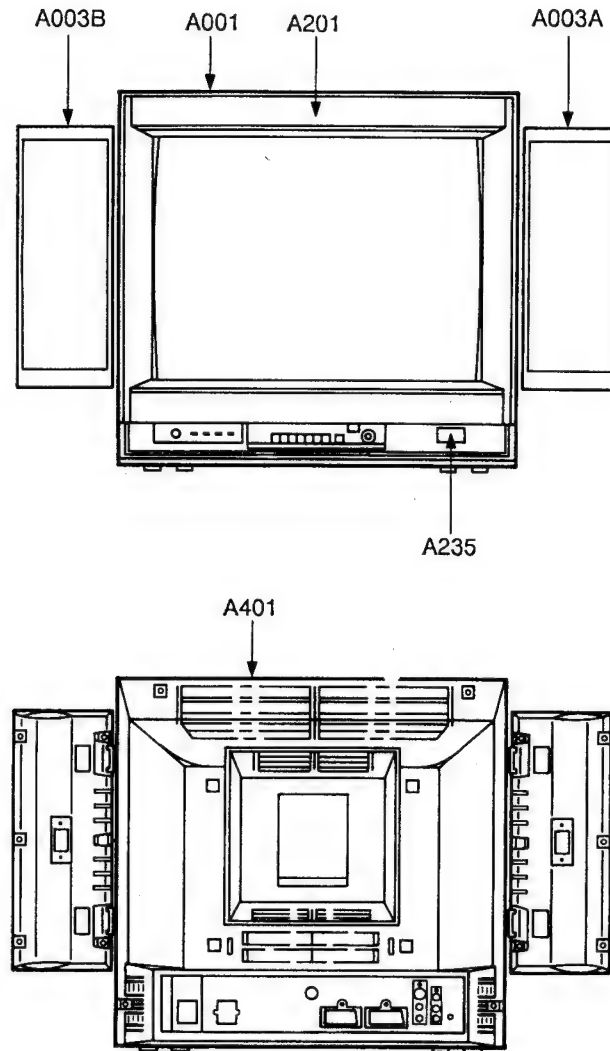
8. OUT OF VERT. SYNC. AND HORIZ. SYNC.

Check/Replace Sync Circuit pin 33 of IC501.

9. OUT OF HORIZ. SYNC.

Check/Replace Horiz. OSC Circuit and Horiz. AFC Circuit connected to Pins 36, 37 and 38 of IC501.
Check/Replace IC501.

CABINET REPLACEMENT PARTS LIST



Location No.	Part No.	Description
A001	23887270	Wood Cabinet
A003A	23418211	Speaker Box(R)
A003B	23418213	Speaker Box(L)
A130	23805390	Foot
A201	23418274	Front Panel
A232	23838213	Control Trim
A235	23443315	Button, POWER
A238	70368125	Push Catch for Door
A301A	23418212	Speaker Box, FRT
A301B	23418212	Speaker Box, FRT
A302A	23415209	Speaker Box, Back
A302B	23415209	Speaker Box, Back

Location No.	Part No.	Description
A303A	23161703	Terminal, 2P
A303B	23161703	Terminal, 2P
A306A	23523227	Case, Speaker Box
A306B	23523227	Case, Speaker Box
A401	23422923	Back Cover
A411	23998361	Label, Model No., B/C
A422	23838236	Trim
A431	23030871	Screw for Speaker
A701	23523296	Carton Box
A702	23934473	Packing, Bottom
A703	23934474	Packing, Top
Y101	23994635	Owner's Manual

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

ABBREVIATIONS:

Capacitors.....	CD : Ceramic Disk	PF : Plastic Film	EL : Electrolytic
Resistors.....	CF : Carbon Film	CC : Carbon Composition	MF : Metal Film
	OMF : Oxide Metal Film	VR : Variable Resistor	FR : Fusible Resistor

(All CD and PF capacitors are $\pm 5\%$, 50V and all resistors, $\pm 5\%$, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C101	24212102	CD, 1000pF, $\pm 10\%$
C102	24212102	CD, 1000pF, $\pm 10\%$
C103	24232103	CD, 0.01 μ F, +80%, -20%
C104	24636220	EL, 22 μ F, 50V
C105	24232103	CD, 0.01 μ F, +80%, -20%
C106	24636229	EL, 2.2 μ F, 50V
C107	24550473	PF, 0.047 μ F, 63V
C108	24707474	Tantalum, 0.47 μ F, $\pm 20\%$, 35V
C109	24232103	CD, 0.01 μ F, +80%, -20%
C110	24232103	CD, 0.01 μ F, +80%, -20%
C111	24636229	EL, 2.2 μ F, 50V
C112	24436560	CD, 56pF
C113	24636478	EL, 0.47 μ F, 50V
C114	24633470	EL, 47 μ F, 50V
C115	24232103	CD, 0.01 μ F, +80%, -20%
C116	24232103	CD, 0.01 μ F, +80%, -20%
C117	24085029	EL, 4.7 μ F, 16V, Non-Polar
C119	24232103	CD, 0.01 μ F, +80%, -20%
C120	24212222	CD, 2200pF, $\pm 10\%$
C121	24085988	EL, 1 μ F, $\pm 20\%$, 50V, Non-Polar
C122	24550153	PF, 0.015 μ F, 63V
C123	24636478	EL, 0.47 μ F, 50V
C124	24794101	EL, 100 μ F, 16V
C125	24232103	CD, 0.01 μ F, +80%, -20%
C126	24212152	CD, 1500pF, $\pm 10\%$
C128	24232103	CD, 0.01 μ F, +80%, -20%
C161	24212102	CD, 1000pF, $\pm 10\%$
C162	24212102	CD, 1000pF, $\pm 10\%$
C163	24212102	CD, 1000pF, $\pm 10\%$
C164	24232103	CD, 0.01 μ F, +80%, -20%
C165	24212102	CD, 1000pF, $\pm 10\%$
C166	24212102	CD, 1000pF, $\pm 10\%$
C167	24212102	CD, 1000pF, $\pm 10\%$
C168	24212102	CD, 1000pF, $\pm 10\%$
C169	24232103	CD, 0.01 μ F, +80%, -20%
C170	24212102	CD, 1000pF, $\pm 10\%$
C171	24232103	CD, 0.01 μ F, +80%, -20%
C201	24636100	EL, 10 μ F, 50V

Location No.	Part No.	Description
C202	24795101	EL, 100 μ F, 25V
C203	24232103	CD, 0.01 μ F, +80%, -20%
C204	24797220	EL, 22 μ F, 50V
C205	24636478	EL, 0.47 μ F, 50V
C207	24633220	EL, 22 μ F, 16V
C208	24212102	CD, 1000pF, $\pm 10\%$
C209	24232103	CD, 0.01 μ F, +80%, -20%
C210	24636100	EL, 10 μ F, 50V
C240	24530474	PF, 0.47 μ F, $\pm 10\%$, 63V
C301	24636229	EL, 2.2 μ F, 50V
C302	24212152	CD, 1500pF, $\pm 10\%$
C303	24617912	EL, 2.2 μ F, $\pm 10\%$, 50V
C304	24212102	CD, 1000pF, $\pm 10\%$
C307	24232103	CD, 0.01 μ F, +80%, -20%
C311	24796102	EL, 1000 μ F, 35V
C313	24796101	EL, 100 μ F, 35V
C315	24214221	CD, 220pF, $\pm 10\%$, 500V
C316	24795332	EL, 3300 μ F, 25V
C317	24617981	EL, 2.2 μ F, $\pm 10\%$, 50V
C318	24214332	CD, 3300pF, $\pm 10\%$, 500V
C320	24693104	PF, 0.1 μ F, 100V
C321	24214391	CD, 390pF, $\pm 10\%$, 500V
C322	24530153	PF, 0.015 μ F, $\pm 10\%$, 63V
C330	24794471	EL, 470 μ F, 16V
C360	24530224	PF, 0.22 μ F, $\pm 10\%$, 63V
C402	24353271	CD, 270pF
C403	24636339	EL, 3.3 μ F, 50V
C405	24593203	PF, 0.02 μ F
C406	24593203	PF, 0.02 μ F
C407	24593243	PF, 0.024 μ F
C408	24617929	EL, 18 μ F, $\pm 20\%$, 50V
C409	24232103	CD, 0.01 μ F, +80%, -20%
C410	24693272	PF, 2700pF, 100V
C412	24550182	PF, 1800pF, 63V
C413	24550182	PF, 1800pF, 63V
C416	24214271	CD, 270pF, $\pm 10\%$, 500V
C423	24232103	CD, 0.01 μ F, +80%, -20%
C424	24795470	EL, 47 μ F, 25V
C425	24794101	EL, 100 μ F, 16V
△ C440	24095636	PF, 7200pF, $\pm 3\%$, 1600V
C441	24214221	CD, 220pF, $\pm 10\%$, 500V

Location No.	Part No.	Description
C442	24095949	PF, 0.33 μ F, 200V
C443	24214221	CD, 220pF, $\pm 10\%$, 500V
C445	24095903	PF, 0.056 μ F, $\pm 10\%$, 250V
△ C446	24214102	CD, 1000pF, $\pm 10\%$, 500V
C447	24644479	EL, 4.7 μ F, 250V
C448	24795222	EL, 2200 μ F, 25V
C449	24794471	EL, 470 μ F, 16V
C451	24640908	EL, 33 μ F, $\pm 20\%$, 160V
△ C463	24212222	CD, 2200pF, $\pm 10\%$
C501	24797220	EL, 22 μ F, 50V
C502	24636100	EL, 10 μ F, 50V
C503	24436101	CD, 100pF
C504	24436101	CD, 100pF
C505	24593273	PF, 0.027 μ F
C506	24593273	PF, 0.027 μ F
C507	24593103	PF, 0.01 μ F
C508	24085028	EL, 2.2 μ F, 25V, Non-Polar
C509	24353330	CD, 33pF
C510	24232103	CD, 0.01 μ F, +80%, -20%
C511	24232103	CD, 0.01 μ F, +80%, -20%
C512	24353200	CD, 20pF
C515	24797220	EL, 22 μ F, 50V
C516	24550104	PF, 0.1 μ F, 63V
C517	24550104	PF, 0.1 μ F, 63V
C518	24232103	CD, 0.01 μ F, +80%, -20%
C519	24232103	CD, 0.01 μ F, +80%, -20%
C520	24636478	EL, 0.47 μ F, 50V
C521	24550474	PF, 0.47 μ F, 63V
C522	24550474	PF, 0.47 μ F, 63V
C523	24550474	PF, 0.47 μ F, 63V
C524	24232103	CD, 0.01 μ F, +80%, -20%
C525	24436820	CD, 82pF
C526	24436820	CD, 82pF
C527	24436820	CD, 82pF
C530	24796220	EL, 22 μ F, 35V
C531	24633100	EL, 10 μ F, 16V
C532	24436820	CD, 82pF
C533	24436820	CD, 82pF
C534	24436820	CD, 82pF
C535	24636100	EL, 10 μ F, 50V
C536	24636478	EL, 0.47 μ F, 50V
C537	24794101	EL, 100 μ F, 16V
C540	24436391	CD, 390pF
C541	24436391	CD, 390pF
C542	24436391	CD, 390pF
C601	24212102	CD, 1000pF, $\pm 10\%$
C612	24636100	EL, 10 μ F, 50V
C613	24636100	EL, 10 μ F, 50V
C614	24633220	EL, 22 μ F, 16V
C615	24636479	EL, 4.7 μ F, 50V
C616	24636229	EL, 2.2 μ F, 50V
C617	24636479	EL, 4.7 μ F, 50V
C618	24636479	EL, 4.7 μ F, 50V
C619	24794470	EL, 47 μ F, 16V
C620	24530103	PF, 0.01 μ F, $\pm 10\%$, 63V
C621	24550563	PF, 0.056 μ F, 63V
C622	24530103	PF, 0.01 μ F, $\pm 10\%$, 63V
C623	24550563	PF, 0.056 μ F, 63V
C624	24797220	EL, 22 μ F, 50V
C625	24794470	EL, 47 μ F, 16V
C626	24636479	EL, 4.7 μ F, 50V
C627	24636479	EL, 4.7 μ F, 50V
C628	24530222	PF, 2200pF, $\pm 10\%$, 63V

Location No.	Part No.	Description
C629	24530222	PF, 2200pF, $\pm 10\%$, 63V
C633	24530104	PF, 0.1 μ F, $\pm 10\%$, 63V
C634	24530123	PF, 0.012 μ F, $\pm 10\%$, 63V
C635	24794101	EL, 100 μ F, 16V
C636	24636478	EL, 0.47 μ F, 50V
C637	24795101	EL, 100 μ F, 25V
C638	24636478	EL, 0.47 μ F, 50V
C640	24530184	PF, 0.18 μ F, $\pm 10\%$, 63V
C641	24530123	PF, 0.012 μ F, $\pm 10\%$, 63V
C642	24794101	EL, 100 μ F, 16V
C643	24530104	PF, 0.1 μ F, $\pm 10\%$, 63V
C644	24797471	EL, 470 μ F, 50V
C645	24530104	PF, 0.1 μ F, $\pm 10\%$, 63V
C646	24795102	EL, 1000 μ F, 25V
C647	24795102	EL, 1000 μ F, 25V
C663	24436470	CD, 47pF
C664	24436470	CD, 47pF
C665	24232103	CD, 0.01 μ F, +80%, -20%
C666	24353680	CD, 68pF
C667	24436471	CD, 470pF
C668	24436471	CD, 470pF
C669	24232103	CD, 0.01 μ F, +80%, -20%
C671	24232103	CD, 0.01 μ F, +80%, -20%
C674	24797470	EL, 47 μ F, 50V
C675	24232103	CD, 0.01 μ F, +80%, -20%
C680	24636339	EL, 3.3 μ F, 50V
C681	24636339	EL, 3.3 μ F, 50V
△ C801	24098999	PF, 0.1 μ F, $\pm 20\%$, AC250V
△ C802	24094655	CD, 1000pF, $\pm 20\%$, AC400V
△ C803	24094655	CD, 1000pF, $\pm 20\%$, AC400V
△ C804	24094655	CD, 1000pF, $\pm 20\%$, AC400V
△ C805	24094655	CD, 1000pF, $\pm 20\%$, AC400V
△ C806	24098999	PF, 0.1 μ F, $\pm 20\%$, AC250V
C811	24092281	CD, 4700pF, $\pm 20\%$, AC250V
C812	24092281	CD, 4700pF, $\pm 20\%$, AC250V
C813	24092281	CD, 4700pF, $\pm 20\%$, AC250V
C814	24092281	CD, 4700pF, $\pm 20\%$, AC250V
C817	24550474	PF, 0.47 μ F, 63V
C818	24086915	EL, 270 μ F, $\pm 20\%$, 450V
C820	24636100	EL, 10 μ F, 50V
C822	24442681	CD, 680pF, $\pm 10\%$, 2kV
C823	24636100	EL, 10 μ F, 50V
C824	24797221	EL, 220 μ F, 50V
C825	24212102	CD, 1000pF, $\pm 10\%$
C826	24530104	PF, 0.1 μ F, $\pm 10\%$, 63V
C827	24598821	PF, 820pF
C828	24636479	EL, 4.7 μ F, 50V
C829	24757470	EL, 47 μ F, 100V
C830	24095931	PF, 2200pF, 1600V
C831	24633100	EL, 10 μ F, 16V
C832	24442181	CD, 180pF, $\pm 10\%$, 2kV
C833	24086953	EL, 220 μ F, $\pm 20\%$, 160V
C834	24530104	PF, 0.1 μ F, $\pm 10\%$, 63V
C835	24214221	CD, 220pF, $\pm 10\%$, 500V
C836	24795222	EL, 2200 μ F, 25V
C837	24436561	CD, 560pF
C838	24598821	PF, 820pF
C839	24550474	PF, 0.47 μ F, 63V
C840	24636100	EL, 10 μ F, 50V
C844	24214221	CD, 220pF, $\pm 10\%$, 500V
C845	24796222	EL, 2200 μ F, 35V
C846	24214221	CD, 220pF, $\pm 10\%$, 500V
C847	24797222	EL, 2200 μ F, 50V
C861	24092027	CD, 390pF, $\pm 10\%$, 2kV

Location No.	Part No.	Description
C862	24636229	EL, 2.2 μ F, 50V
C863	24214391	CD, 390pF, $\pm 10\%$, 500V
C901	24640987	EL, 2.2 μ F, 350V
C902	24095981	PF, 2200pF, 1600V
CA02	24232103	CD, 0.01 μ F, +80%, -20%
CA03	24633100	EL, 10 μ F, 16V
CA05	24232103	CD, 0.01 μ F, +80%, -20%
CA06	24436300	CD, 30pF
CA07	24436300	CD, 30pF
CA08	24636010	EL, 1 μ F, 50V
CA09	24636100	EL, 10 μ F, 50V
CA10	24636479	EL, 4.7 μ F, 50V
CA12	24707225	Tantalum, 2.2 μ F, $\pm 20\%$, 35V
CA13	24636479	EL, 4.7 μ F, 50V
CA14	24795470	EL, 47 μ F, 25V
CA15	24212472	CD, 4700pF, $\pm 10\%$
CA16	24212102	CD, 1000pF, $\pm 10\%$
CA17	24212561	CD, 560pF, $\pm 10\%$
CA18	24212472	CD, 4700pF, $\pm 10\%$
CA19	24212102	CD, 1000pF, $\pm 10\%$
CA20	24436391	CD, 390pF
CA21	24436221	CD, 220pF
CA22	24550104	PF, 0.1 μ F, 63V
CA23	24550104	PF, 0.1 μ F, 63V
CA24	24550104	PF, 0.1 μ F, 63V
CA25	24636229	EL, 2.2 μ F, 50V
CA26	24232103	CD, 0.01 μ F, +80%, -20%
CA27	24550104	PF, 0.1 μ F, 63V
CA28	24636100	EL, 10 μ F, 50V
CA29	24636100	EL, 10 μ F, 50V
CA30	24636010	EL, 1 μ F, 50V
CA32	24550104	PF, 0.1 μ F, 63V
CA33	24795470	EL, 47 μ F, 25V
CA34	24232103	CD, 0.01 μ F, +80%, -20%
CA40	24794102	EL, 1000 μ F, 16V
CB01	24436101	CD, 100pF
CE11	24636100	EL, 10 μ F, 50V
CE12	24085991	EL, 1 μ F, $\pm 20\%$, 25V, Non-Polar
CE14	24636478	EL, 0.47 μ F, 50V
CE15	24633100	EL, 10 μ F, 16V
CE16	24550224	PF, 0.22 μ F, 63V
CE17	24085991	EL, 1 μ F, $\pm 20\%$, 25V, Non-Polar
CG01	24633100	EL, 10 μ F, 16V
CG02	24212102	CD, 1000pF, $\pm 10\%$
CG03	24794101	EL, 100 μ F, 16V
CG04	24794101	EL, 100 μ F, 16V
CG05	24633100	EL, 10 μ F, 16V
CG06	24794101	EL, 100 μ F, 16V
CG07	24794101	EL, 100 μ F, 16V
CG09	24550103	PF, 0.01 μ F, 63V
CG10	24550103	PF, 0.01 μ F, 63V
CG11	24794470	EL, 47 μ F, 16V
CG12	24794470	EL, 47 μ F, 16V
CG13	24550104	PF, 0.1 μ F, 63V
CG15	24550224	PF, 0.22 μ F, 63V
CG16	24550473	PF, 0.047 μ F, 63V
CG17	24550223	PF, 0.022 μ F, 63V
CG19	24794470	EL, 47 μ F, 16V
CG21	24232103	CD, 0.01 μ F, +80%, -20%
CG22	24232103	CD, 0.01 μ F, +80%, -20%
CG23	24232103	CD, 0.01 μ F, +80%, -20%

Location No.	Part No.	Description
CG24	24085991	EL, 1 μ F, $\pm 20\%$, 25V, Non-Polar
CG25	24085991	EL, 1 μ F, $\pm 20\%$, 25V, Non-Polar
CG26	24436151	CD, 150pF
CG27	24085023	EL, 10 μ F, 16V, Non-Polar
CG28	24636100	EL, 10 μ F, 50V
CH01	24636010	EL, 1 μ F, 50V
CH02	24636010	EL, 1 μ F, 50V
CH03	24636010	EL, 1 μ F, 50V
CH05	24636100	EL, 10 μ F, 50V
CH06	24232103	CD, 0.01 μ F, +80%, -20%
CH07	24794471	EL, 470 μ F, 16V
CH10	24636010	EL, 1 μ F, 50V
CH11	24636010	EL, 1 μ F, 50V
CH12	24636010	EL, 1 μ F, 50V
CH13	24794471	EL, 470 μ F, 16V
CH14	24794471	EL, 470 μ F, 16V
CH15	24636100	EL, 10 μ F, 50V
CH16	24636100	EL, 10 μ F, 50V
CH17	24636010	EL, 1 μ F, 50V
CH30	24550104	PF, 0.1 μ F, 63V
CM01	24436221	CD, 220pF
CM02	24436221	CD, 220pF
CM05	24232103	CD, 0.01 μ F, +80%, -20%
CM06	24357270	CD, 27pF
CM07	24593273	PF, 0.027 μ F
CM08	24232103	CD, 0.01 μ F, +80%, -20%
CM09	24232103	CD, 0.01 μ F, +80%, -20%
CM10	24436270	CD, 27pF
CN01	24232103	CD, 0.01 μ F, +80%, -20%
CN02	24436300	CD, 30pF
CN03	24232103	CD, 0.01 μ F, +80%, -20%
CN04	24436470	CD, 47pF
CN06	24436820	CD, 82pF
CN07	24436300	CD, 30pF
CN08	24232103	CD, 0.01 μ F, +80%, -20%
CN09	24636100	EL, 10 μ F, 50V
CN10	24436101	CD, 100pF
CN11	24353080	CD, 8pF, ± 0.25 pF
CN12	24353220	CD, 22pF
CN13	24232103	CD, 0.01 μ F, +80%, -20%
CN14	24232103	CD, 0.01 μ F, +80%, -20%
CN15	24353150	CD, 15pF
CN16	24212102	CD, 1000pF, $\pm 10\%$
CN17	24212102	CD, 1000pF, $\pm 10\%$
CN18	24353300	CD, 30pF
CN19	24353120	CD, 12pF
CN20	24232103	CD, 0.01 μ F, +80%, -20%
CN51	24094959	Variable Capacitor, 2 to 12pF, 50V
CV01	24636229	EL, 2.2 μ F, 50V
CV02	24636229	EL, 2.2 μ F, 50V
CV03	24636100	EL, 10 μ F, 50V
CV04	24636229	EL, 2.2 μ F, 50V
CV05	24636229	EL, 2.2 μ F, 50V
CV06	24636100	EL, 10 μ F, 50V
CV07	24636100	EL, 10 μ F, 50V
CV08	24636229	EL, 2.2 μ F, 50V
CV09	24636229	EL, 2.2 μ F, 50V
CV10	24636100	EL, 10 μ F, 50V
CV11	24636229	EL, 2.2 μ F, 50V
CV12	24636229	EL, 2.2 μ F, 50V

Location No.	Part No.	Description
CV13	24636100	EL, 10 μ F, 50V
CV15	24636010	EL, 1 μ F, 50V
CV16	24232103	CD, 0.01 μ F, +80%, -20%
CV17	24232103	CD, 0.01 μ F, +80%, -20%
CV18	24633100	EL, 10 μ F, 16V
CV19	24636100	EL, 10 μ F, 50V
CV20	24212471	CD, 470pF, \pm 10%
CV21	24212471	CD, 470pF, \pm 10%
CX02	24550474	PF, 0.47 μ F, 63V
CX03	24550474	PF, 0.47 μ F, 63V
CX04	24550474	PF, 0.47 μ F, 63V

RESISTORS

R101	24366222	CF, 2200 ohm
R102	24366124	CF, 120k ohm
R103	24366222	CF, 2200 ohm
R104	24366332	CF, 3300 ohm
R105	24366153	CF, 15k ohm
R106	24366104	CF, 100k ohm
R107	24366103	CF, 10k ohm
R108	24366102	CF, 1k ohm
R109	24366822	CF, 8200 ohm
R110	24366562	CF, 5600 ohm
R111	24366821	CF, 820 ohm
R112	24366332	CF, 3300 ohm
R113	24366132	CF, 1300 ohm
R114	24366222	CF, 2200 ohm
R115	24366101	CF, 100 ohm
R116	24366471	CF, 470 ohm
R117	24366112	CF, 1100 ohm
R118	24366470	CF, 47 ohm
R119	24366472	CF, 4700 ohm
R120	24366154	CF, 150k ohm
R121	24366331	CF, 330 ohm
R122	24366820	CF, 82 ohm
R123	24366241	CF, 240 ohm
R124	24366271	CF, 270 ohm
R125	24366331	CF, 330 ohm
R126	24366101	CF, 100 ohm
△ R127	24552101	OMF, 100 ohm, 1/2W
R128	24366334	CF, 330k ohm
R129	24366101	CF, 100 ohm
R130	24366513	CF, 51k ohm
R131	24366753	CF, 75k ohm
R132	24366684	CF, 680k ohm
R133	24366332	CF, 3300 ohm
R134	24366223	CF, 22k ohm
R151	24066953	VR, 5k ohm, 1/10W
R152	24066951	VR, 20k ohm, 1/10W
R153	24066946	VR, 1M ohm, 1/10W
R161	24366131	CF, 130 ohm
R162	24366680	CF, 68 ohm
R163	24366682	CF, 6800 ohm
R164	24366102	CF, 1k ohm
R165	24366562	CF, 5600 ohm
R166	24366390	CF, 39 ohm
△ R167	24552101	OMF, 100 ohm, 1/2W
R168	24366680	CF, 68 ohm
R169	24366682	CF, 6800 ohm
R170	24366102	CF, 1k ohm
R171	24366562	CF, 5600 ohm
R172	24366390	CF, 39 ohm
△ R173	24552101	OMF, 100 ohm, 1/2W
R201	24366271	CF, 270 ohm

Location No.	Part No.	Description
R202	24366181	CF, 180 ohm
R203	24366182	CF, 1800 ohm
R204	24366152	CF, 1500 ohm
R205	24366152	CF, 1500 ohm
R206	24366103	CF, 10k ohm
R207	24366103	CF, 10k ohm
R208	24366101	CF, 100 ohm
R209	24366103	CF, 10k ohm
R210	24366203	CF, 20k ohm
R211	24366622	CF, 6200 ohm
R212	24366103	CF, 10k ohm
R213	24366101	CF, 100 ohm
R214	24366182	CF, 1800 ohm
R215	24366152	CF, 1500 ohm
R216	24366133	CF, 13k ohm
R217	24366101	CF, 100 ohm
R218	24366222	CF, 2200 ohm
R219	24366472	CF, 4700 ohm
R225	24366132	CF, 1300 ohm
R242	24366183	CF, 18k ohm
R243	24366223	CF, 22k ohm
R252	24061592	VR, 1k ohm, 1/8W
R253	24061592	VR, 1k ohm, 1/8W
R255	24066952	VR, 10k ohm, 1/10W
R301	24366301	CF, 300 ohm
R302	24366244	CF, 240k ohm
R303	24366303	CF, 30k ohm
R304	24366102	CF, 1k ohm
R305	24366161	CF, 160 ohm
R306	24366471	CF, 470 ohm
R310	24366824	CF, 820k ohm
△ R311	24552242	OMF, 2400 ohm, 1/2W
R315	24366163	CF, 16k ohm
R316	24366183	CF, 18k ohm
△ R317	24383391	OMF, 390 ohm, 2W
R318	24366434	CF, 430k ohm
△ R319	24552302	OMF, 3k ohm, 1/2W
△ R323	24322129	OMF, 1.2 ohm, 1W
△ R324	24552122	OMF, 1200 ohm, 1/2W
△ R327	24532130	FR, 13 ohm, 1W
R333	24366102	CF, 1k ohm
R351	24066950	VR, 50k ohm, 1/10W
R360	24366184	CF, 180k ohm
R362	24366153	CF, 15k ohm
R386	24366561	CF, 560 ohm
R402	24366273	CF, 27k ohm
R403	24366302	CF, 3k ohm
△ R404	24552432	OMF, 4300 ohm, 1/2W
R405	24366511	CF, 510 ohm
R406	24366431	CF, 430 ohm
R407	24366161	CF, 160 ohm
R408	24366682	CF, 6800 ohm
R409	24366103	CF, 10k ohm
△ R410	24552472	OMF, 4700 ohm, 1/2W
R411	24366391	CF, 390 ohm
R412	24366121	CF, 120 ohm
R413	24366103	CF, 10k ohm
R414	24366472	CF, 4700 ohm
△ R416	24007566	Cement, 2k ohm, 5W
R417	24366510	CF, 51 ohm
△ R420	24009951	OMF, 1k ohm, 1W
△ R423	24552221	OMF, 220 ohm, 1/2W
△ R440	24552103	OMF, 10k ohm, 1/2W
△ R441	24552103	OMF, 10k ohm, 1/2W

Location No.	Part No.	Description
△ R442	24553102	OMF, 1k ohm, 1W
△ R444	24007768	Cement, 15 ohm, 10W
△ R445	24552330	OMF, 33 ohm, 1/2W
△ R448	24984229	MF, 2.2 ohm, 2W
R451	24066951	VR, 20k ohm, 1/10W
R452	24069547	VR, 5k ohm, 0.08W
R501	24366821	CF, 820 ohm
R502	24366334	CF, 330k ohm
R503	24366202	CF, 2k ohm
R504	24366391	CF, 390 ohm
R505	24366822	CF, 8200 ohm
R507	24366822	CF, 8200 ohm
R508	24366821	CF, 820 ohm
R509	24366203	CF, 20k ohm
R510	24366101	CF, 100 ohm
R511	24366562	CF, 5600 ohm
R512	24366152	CF, 1500 ohm
R513	24366152	CF, 1500 ohm
R515	24366221	CF, 220 ohm
R516	24366221	CF, 220 ohm
R517	24366221	CF, 220 ohm
R521	24366102	CF, 1k ohm
R522	24360185	CF, 1.8M ohm, 1/8W
R523	24366303	CF, 30k ohm
R524	24366103	CF, 10k ohm
R525	24366103	CF, 10k ohm
R526	24366122	CF, 1200 ohm
R527	24366122	CF, 1200 ohm
R531	24366271	CF, 270 ohm
R532	24366431	CF, 430 ohm
R533	24366561	CF, 560 ohm
R535	24366561	CF, 560 ohm
R537	24366561	CF, 560 ohm
R538	24366511	CF, 510 ohm
R539	24366561	CF, 560 ohm
R541	24366821	CF, 820 ohm
R542	24366271	CF, 270 ohm
R543	24366103	CF, 10k ohm
R544	24366101	CF, 100 ohm
R547	24366101	CF, 100 ohm
R548	24366101	CF, 100 ohm
R549	24366101	CF, 100 ohm
R551	24066955	VR, 1k ohm, 1/10W
R557	24061591	VR, 2k ohm, 1/8W
R558	24061591	VR, 2k ohm, 1/8W
R559	24061591	VR, 2k ohm, 1/8W
R565	24366560	CF, 56 ohm
R566	24366560	CF, 56 ohm
R567	24366560	CF, 56 ohm
R568	24366102	CF, 1k ohm
△ R591	24009974	OMF, 15k ohm, 2W
△ R592	24009974	OMF, 15k ohm, 2W
△ R593	24009974	OMF, 15k ohm, 2W
R603	24366222	CF, 2200 ohm
R610	24366473	CF, 47k ohm
R611	24366473	CF, 47k ohm
R612	24366154	CF, 150k ohm
R613	24366471	CF, 470 ohm
R615	24366471	CF, 470 ohm
R616	24366104	CF, 100k ohm
R617	24366104	CF, 100k ohm
R619	24366122	CF, 1200 ohm
R620	24366103	CF, 10k ohm
R621	24366122	CF, 1200 ohm

Location No.	Part No.	Description
R622	24366122	CF, 1200 ohm
R624	24366154	CF, 150k ohm
R625	24366154	CF, 150k ohm
R626	24366472	CF, 4700 ohm
R627	24366472	CF, 4700 ohm
R628	24366123	CF, 12k ohm
R629	24366123	CF, 12k ohm
R632	24366562	CF, 5600 ohm
R633	24366562	CF, 5600 ohm
R639	24366332	CF, 3300 ohm
R640	24366182	CF, 1800 ohm
R642	24366332	CF, 3300 ohm
R643(U902)	24366103	CF, 10k ohm
R643(U903A)	24366182	CF, 1800 ohm
R644	24366229	CF, 2.2 ohm
R645	24366229	CF, 2.2 ohm
R646	24366473	CF, 47k ohm
R647	24366473	CF, 47k ohm
R648	24366682	CF, 6800 ohm
R649	24366682	CF, 6800 ohm
R664	24366102	CF, 1k ohm
R665	24366563	CF, 56k ohm
R666	24366563	CF, 56k ohm
R667	24366102	CF, 1k ohm
R668	24366102	CF, 1k ohm
R669	24366102	CF, 1k ohm
R670	24366183	CF, 18k ohm
R671	24366242	CF, 2400 ohm
R672	24366561	CF, 560 ohm
R673	24366271	CF, 270 ohm
R675	24366821	CF, 820 ohm
R679	24366102	CF, 1k ohm
R680	24366152	CF, 1500 ohm
R681	24366223	CF, 22k ohm
R682	24366105	CF, 1M ohm
R683	24366821	CF, 820 ohm
R684	24366222	CF, 2200 ohm
△ R686	24552431	OMF, 430 ohm, 1/2W
△ R690	24552181	OMF, 180 ohm, 1/2W
△ R691	24552181	OMF, 180 ohm, 1/2W
R801	24942565	CC, 5.6M ohm, 1/2W
△ R805	24007857	Cement, 6.2 ohm, 15W
△ R810	24384683	OMF, 68k ohm, 3W
△ R811	24531100	FR, 10 ohm, 1/2W
△ R812	24321689	OMF, 6.8 ohm, 1/2W
△ R813	24553471	OMF, 470 ohm, 1W
△ R814	24322399	OMF, 3.9 ohm, 1W
R815	24367683	CF, 68k ohm, ±2%
R816	24367123	CF, 12k ohm, ±2%
△ R817	24007952	Cement, 6.8 ohm, 5W
R818	24366331	CF, 330 ohm
△ R819	24327114	MF, 110k ohm, ±1%, 1/4W
R820	24366100	CF, 10 ohm
R821	24366101	CF, 100 ohm
△ R822	24322518	OMF, 0.51 ohm, 1W
R823	24007738	Cement, 330 ohm, 10W
△ R824	24322518	OMF, 0.51 ohm, 1W
R825	24366101	CF, 100 ohm
R826	24366331	CF, 330 ohm
△ R827	24383822	OMF, 8200 ohm, 2W
R828	24366103	CF, 10k ohm
△ R830	24552471	OMF, 470 ohm, 1/2W
R831	24366102	CF, 1k ohm
△ R832	24321338	OMF, 0.33 ohm, 1/2W

Location No.	Part No.	Description
△ R833	24327104	MF, 100k ohm, $\pm 1\%$, 1/4W
△ R834	24327222	MF, 2.2k ohm, $\pm 1\%$, 1/4W
R835	24366823	CF, 82k ohm
△ R836	24327104	MF, 100k ohm, $\pm 1\%$, 1/4W
△ R837	24381100	OMF, 10 ohm, 1/2W
R838	24366103	CF, 10k ohm
R840	24366103	CF, 10k ohm
△ R841	24381562	OMF, 5600 ohm, 1/2W
R843	24366332	CF, 3300 ohm
R844	24366103	CF, 10k ohm
R845	24366332	CF, 3300 ohm
R847	24366102	CF, 1k ohm
R851	24066924	VR, 50k ohm, 1/10W
R852	24066925	VR, 20k ohm, 1/10W
R860	24366182	CF, 1800 ohm
△ R861	24982398	OMF, 0.39 ohm, 1/2W
R865	24366222	CF, 2200 ohm
R867	24366472	CF, 4700 ohm
R868	24366103	CF, 10k ohm
R869	24366102	CF, 1k ohm
R870	24366102	CF, 1k ohm
R871	24366222	CF, 2200 ohm
R872	24366103	CF, 10k ohm
△ R873	24383621	OMF, 620 ohm, 2W
R874	24366123	CF, 12k ohm
△ R890	24000630	PTC Thermistor, Dual
R901	24946272	CC, 2700 ohm, $\pm 10\%$, 1/2W
R902	24946272	CC, 2700 ohm, $\pm 10\%$, 1/2W
R903	24946272	CC, 2700 ohm, $\pm 10\%$, 1/2W
△ R920	24000938	FR, 0.47 ohm, $\pm 10\%$, 2W
RA01	24366223	CF, 22k ohm
RA02	24366223	CF, 22k ohm
RA03	24366102	CF, 1k ohm
RA04	24366102	CF, 1k ohm
RA05	24366272	CF, 2700 ohm
RA06	24366472	CF, 4700 ohm
RA07	24366472	CF, 4700 ohm
RA08	24366472	CF, 4700 ohm
RA09	24366103	CF, 10k ohm
RA10	24366472	CF, 4700 ohm
RA11	24366102	CF, 1k ohm
RA12	24366153	CF, 15k ohm
RA13	24366563	CF, 56k ohm
RA14	24366103	CF, 10k ohm
RA15	24366102	CF, 1k ohm
RA17	24366102	CF, 1k ohm
RA18	24366101	CF, 100 ohm
RA19	24366472	CF, 4700 ohm
RA20	24366102	CF, 1k ohm
RA21	24366223	CF, 22k ohm
RA22	24366333	CF, 33k ohm
RA23	24366333	CF, 33k ohm
RA24	24366333	CF, 33k ohm
RA25	24360225	CF, 2.2M ohm, 1/8W
RA26(U902)	24366333	CF, 33k ohm
RA26(U903D)	24366102	CF, 1k ohm
RA27	24366333	CF, 33k ohm
RA28	24366473	CF, 47k ohm
RA29	24366103	CF, 10k ohm
RA30	24366102	CF, 1k ohm
RA31	24366472	CF, 4700 ohm
RA32	24366102	CF, 1k ohm
RA33	24366102	CF, 1k ohm
RA34	24366103	CF, 10k ohm

Location No.	Part No.	Description
RA35	24366152	CF, 1500 ohm
RA36	24366473	CF, 47k ohm
RA37	24366103	CF, 10k ohm
RA38	24366392	CF, 3900 ohm
RA39	24366123	CF, 12k ohm
RA40	24366563	CF, 56k ohm
RA41	24366564	CF, 560k ohm
RA42	24366561	CF, 560 ohm
RA43	24366473	CF, 47k ohm
RA44	24366105	CF, 1M ohm
RA45	24366102	CF, 1k ohm
RA46	24366153	CF, 15k ohm
RA48	24366153	CF, 15k ohm
RA49	24366123	CF, 12k ohm
RA60	24366102	CF, 1k ohm
RA66	24366102	CF, 1k ohm
RA67	24366103	CF, 10k ohm
RA68	24366152	CF, 1500 ohm
RA69	24366152	CF, 1500 ohm
RA70	24941565	CC, 5.6M ohm, 1/4W
RA71	24941565	CC, 5.6M ohm, 1/4W
RA72	24941565	CC, 5.6M ohm, 1/4W
RA73	24941565	CC, 5.6M ohm, 1/4W
RA74	24366472	CF, 4700 ohm
RA75	24366471	CF, 470 ohm
RA76	24366471	CF, 470 ohm
RA77	24366471	CF, 470 ohm
RA79	24366123	CF, 12k ohm
RA80	24366221	CF, 220 ohm
RA81	24366103	CF, 10k ohm
RA82	24366103	CF, 10k ohm
RA83	24366473	CF, 47k ohm
RA84	24366103	CF, 10k ohm
RA85	24366102	CF, 1k ohm
RA86	24366392	CF, 3900 ohm
RA87	24366332	CF, 3300 ohm
RA88	24366222	CF, 2200 ohm
RA89	24366103	CF, 10k ohm
RA90	24366103	CF, 10k ohm
RB01	24366472	CF, 4700 ohm
RB02	24366332	CF, 3300 ohm
RB03	24366103	CF, 10k ohm
RB04	24366103	CF, 10k ohm
RB05	24366392	CF, 3900 ohm
RB06	24366473	CF, 47k ohm
RE11	24366562	CF, 5600 ohm
RE12	24366392	CF, 3900 ohm
RE35	24366222	CF, 2200 ohm
RE36	24366823	CF, 82k ohm
RE37	24366823	CF, 82k ohm
RE38	24366563	CF, 56k ohm
RE39	24366202	CF, 2k ohm
RE40	24366123	CF, 12k ohm
RE41	24366103	CF, 10k ohm
RE42	24366472	CF, 4700 ohm
RE43	24366563	CF, 56k ohm
RG01	24366272	CF, 2700 ohm
RG02	24366103	CF, 10k ohm
RG03	24366103	CF, 10k ohm
RG06	24366104	CF, 100k ohm
RG07	24366104	CF, 100k ohm
RG09	24366473	CF, 47k ohm
RG12	24366303	CF, 30k ohm
RG13	24366103	CF, 10k ohm

Location No.	Part No.	Description
RG14	24366822	CF, 8200 ohm
RG15	24366103	CF, 10k ohm
RG16	24366223	CF, 22k ohm
RG17	24366103	CF, 10k ohm
RG21	24366221	CF, 220 ohm
RG22	24366103	CF, 10k ohm
RG23	24366332	CF, 3300 ohm
RG24	24366332	CF, 3300 ohm
RG25	24366101	CF, 100 ohm
RG26	24366102	CF, 1k ohm
RG27	24366101	CF, 100 ohm
RG28	24366102	CF, 1k ohm
RG33	24366122	CF, 1200 ohm
RG34	24366122	CF, 1200 ohm
RG35	24366473	CF, 47k ohm
RG38	24366103	CF, 10k ohm
RG43	24366103	CF, 10k ohm
RG46	24366103	CF, 10k ohm
RG47	24366103	CF, 10k ohm
RG51	24066939	VR, 10k ohm, 1/10W
RG64	24366562	CF, 5600 ohm
RG65	24366473	CF, 47k ohm
RG66	24366224	CF, 220k ohm
RG67	24366473	CF, 47k ohm
RH01	24366101	CF, 100 ohm
RH02	24366101	CF, 100 ohm
RH03	24366101	CF, 100 ohm
RH04	24366510	CF, 51 ohm
RH05	24366510	CF, 51 ohm
RH06	24366510	CF, 51 ohm
RH07	24366220	CF, 22 ohm
RH08	24366220	CF, 22 ohm
RH09	24366220	CF, 22 ohm
RH10	24366103	CF, 10k ohm
RH11	24366102	CF, 1k ohm
RH14	24366102	CF, 1k ohm
RH15	24366103	CF, 10k ohm
RH16	24366103	CF, 10k ohm
RH17	24366680	CF, 68 ohm
RH18	24366910	CF, 91 ohm
RH19	24366104	CF, 100k ohm
RH20	24366104	CF, 100k ohm
RH21	24366910	CF, 91 ohm
RH22	24366103	CF, 10k ohm
RH23	24366104	CF, 100k ohm
RH24	24366680	CF, 68 ohm
RH25	24366472	CF, 4700 ohm
RH27	24366102	CF, 1k ohm
RH28	24366102	CF, 1k ohm
RH29	24366152	CF, 1500 ohm
RH30	24366103	CF, 10k ohm
RH31	24366682	CF, 6800 ohm
RH32	24366102	CF, 1k ohm
RH33	24366103	CF, 10k ohm
RH34	24366750	CF, 75 ohm
RH39	24366820	CF, 82 ohm
RH40	24366242	CF, 2400 ohm
RH41	24366391	CF, 390 ohm
RH42	24366242	CF, 2400 ohm
RH43	24366391	CF, 390 ohm
RH44	24366242	CF, 2400 ohm
RH45	24366681	CF, 680 ohm
RH46	24366104	CF, 100k ohm
RH47	24366123	CF, 12k ohm

Location No.	Part No.	Description
RH48	24366123	CF, 12k ohm
RH49	24366750	CF, 75 ohm
RH60	24366820	CF, 82 ohm
RH61	24366104	CF, 100k ohm
RH62	24366104	CF, 100k ohm
RH63	24366471	CF, 470 ohm
RH64	24366471	CF, 470 ohm
RH65	24366104	CF, 100k ohm
RH66	24366104	CF, 100k ohm
RH67	24366473	CF, 47k ohm
RH68	24366473	CF, 47k ohm
RM03	24366272	CF, 2700 ohm
RM04	24366432	CF, 4300 ohm
RM05	24366471	CF, 470 ohm
RM06	24366471	CF, 470 ohm
RM07	24941475	CC, 4.7M ohm, 1/4W
RM26	24366333	CF, 33k ohm
RN01	24366103	CF, 10k ohm
RN02	24366471	CF, 470 ohm
RN03	24366223	CF, 22k ohm
RN04	24366201	CF, 200 ohm
RN05	24366222	CF, 2200 ohm
RN06	24366392	CF, 3900 ohm
RN07	24366103	CF, 10k ohm
RN08	24360185	CF, 1.8M ohm, 1/8W
RN09	24366103	CF, 10k ohm
RN10	24366472	CF, 4700 ohm
RN11	24366222	CF, 2200 ohm
RN12	24366272	CF, 2700 ohm
RN13	24366103	CF, 10k ohm
RN14	24366103	CF, 10k ohm
RN15	24366223	CF, 22k ohm
RN16	24366103	CF, 10k ohm
RN17	24366473	CF, 47k ohm
RN18	24366103	CF, 10k ohm
RN19	24366473	CF, 47k ohm
RN20	24366821	CF, 820 ohm
RN21	24366332	CF, 3300 ohm
RN22	24366152	CF, 1500 ohm
RN23	24366472	CF, 4700 ohm
RN24	24366103	CF, 10k ohm
RN25	24366244	CF, 240k ohm
RN26	24366472	CF, 4700 ohm
RN27	24366153	CF, 15k ohm
RN28	24366332	CF, 3300 ohm
RN30	24366103	CF, 10k ohm
RN31	24366473	CF, 47k ohm
RN32	24366105	CF, 1M ohm
RN33	24366103	CF, 10k ohm
RN34	24366473	CF, 47k ohm
RN35	24366102	CF, 1k ohm
RN36	24366103	CF, 10k ohm
RN37	24366473	CF, 47k ohm
RN38	24366562	CF, 5600 ohm
RN39	24366562	CF, 5600 ohm
RN40	24366562	CF, 5600 ohm
RN41	24366152	CF, 1500 ohm
RN42	24366473	CF, 47k ohm
RN43	24366103	CF, 10k ohm
RN44	24366152	CF, 1500 ohm
RN45	24366473	CF, 47k ohm
RN46	24366103	CF, 10k ohm
RN47	24366473	CF, 47k ohm
RN48	24366103	CF, 10k ohm

Location No.	Part No.	Description
RN49	24366152	CF, 1500 ohm
RN60	24366103	CF, 10k ohm
RN61	24366103	CF, 10k ohm
RN62	24366103	CF, 10k ohm
RN63	24366223	CF, 22k ohm
RN64	24366103	CF, 10k ohm
RR06	24366391	CF, 390 ohm
RV01	24366821	CF, 820 ohm
RV02	24366102	CF, 1k ohm
RV03	24366102	CF, 1k ohm
RV04	24366102	CF, 1k ohm
RV05	24366101	CF, 100 ohm
RV06	24366101	CF, 100 ohm
RV07	24366102	CF, 1k ohm
RV08	24366102	CF, 1k ohm
RV09	24366101	CF, 100 ohm
RV10	24366102	CF, 1k ohm
RV11	24366102	CF, 1k ohm
RV12	24366101	CF, 100 ohm
RV13	24366103	CF, 10k ohm
RV14	24366103	CF, 10k ohm
RV15	24366101	CF, 100 ohm
RV16	24366473	CF, 47k ohm
RV17	24366473	CF, 47k ohm
RV18	24366103	CF, 10k ohm
RV19	24366102	CF, 1k ohm
RV20	24366101	CF, 100 ohm
RV21	24366332	CF, 3300 ohm
RV23	24366332	CF, 3300 ohm
△ RV24	24552750	OMF, 75 ohm, 1/2W
RV25	24366331	CF, 330 ohm
RV26	24366391	CF, 390 ohm
RV27	24366104	CF, 100k ohm
RV28	24366104	CF, 100k ohm
RV29	24366223	CF, 22k ohm
RV30	24366223	CF, 22k ohm
RV31	24366223	CF, 22k ohm
RV32	24366223	CF, 22k ohm
RV33	24366473	CF, 47k ohm
RV35	24366473	CF, 47k ohm
RV37	24366101	CF, 100 ohm
RV38(U902)	24366104	CF, 100k ohm
RV38(U903D)	24366102	CF, 1k ohm
RV39(U902)	24366102	CF, 1k ohm
RV39(U903D)	24366102	CF, 1k ohm
RV40	24366563	CF, 56k ohm
RX02	24366102	CF, 1k ohm
RX05	24366101	CF, 100 ohm
RX08	24366101	CF, 100 ohm
RX10	24366101	CF, 100 ohm
RX13	24366223	CF, 22k ohm
COILS & TRANSFORMERS		
L101	23237987	Coil, Peaking, TRF4100AC
L102	23262650	Coil, IF, TRF1149D
L103	23237987	Coil, Peaking, TRF4100AC
L104	23237987	Coil, Peaking, TRF4100AC
L105	23237984	Coil, Peaking, TRF4180AC
L107	23237987	Coil, Peaking, TRF4100AC
L151	23262783	Coil, IF, TRF1105T
L152	23262813	Coil, IF, TRF1077D
L153	23262663	Coil, IF, TRF1157T
L161	23201005	Coil, Choke, TRF9202C

Location No.	Part No.	Description
L162	23201005	Coil, Choke, TRF9202C
L201	23237974	Coil, Peaking, TRF4121AC
L311	23261974	Coil, Choke, HC5-035
L405	23221739	Coil, Choke, TRF9252D
L406	23103859	Coil (Ferrite Bead), TEM2011
L411	23233065	Coil, Linearity, TLN2111
△ L462	23227339	Deflection Yoke, 4700-02
L503	23237987	Coil, Peaking, TRF4100AC
L551	23250972	Coil, 1H-Delay Matching, TRF5418D
L590	23237973	Coil, Peaking, TRF4151AC
L591	23237973	Coil, Peaking, TRF4151AC
L592	23237973	Coil, Peaking, TRF4151AC
L602	23262845	Coil, PIF, TRF1056
L661	23237986	Coil, Peaking, TRF4120AC
L662	23232946	Coil, Variable, TRF3073D
L802	23221076	Coil, Choke, TLN1015R
L803	23261975	Coil, Choke, TRF9229
L804	23261975	Coil, Choke, TRF9229
L805	23221746	Coil, Choke, TLN3155D
L806	23103859	Coil (Ferrite Bead), TEM2011
L807	23237987	Coil, Peaking, TRF4100AC
L808	23222694	Coil, Width, TLN2026
L809	23103859	Coil (Ferrite Bead), TEM2011
L811	23103859	Coil (Ferrite Bead), TEM2011
△ L901	23200779	Coil, Degaussing, TSB-2231
LA01	23238934	Coil, Peaking, TRF4109AC
LA02	23221803	Coil, Choke, TLN3040D
LB01	23262778	Coil, IF, TRF1112
LG01	23262808	Coil, IF, TRF1082
LM01	23262797	Coil, IF, TRF1093D
LM02	23272988	Coil, Chroma Demod, TRF5414
LM03	23272988	Coil, Chroma Demod, TRF5414
LM04	23262798	Coil, IF, TRF1092D
LN02	23237985	Coil, Peaking, TRF4150AC
LN03	23237983	Coil, Peaking, TRF4220AC
LV01	23237988	Coil, Peaking, TRF4829AC
△ T401	23224983	Transformer, Horiz. Drive, TLN1039
△ T461	23236201	Transformer, Flyback, TFB4090AD
T801	23211934	Line Filter, TRF3133
T802	23211962	Line Filter, TRF3117
△ T803	23213503	Transformer, Converter, G4572-P4
T804	23224917	Transformer, Separation, TLN2122
SEMICONDUCTORS		
IC101	23318437	IC, μ PC1820CA
IC303	23119548	IC, AN5515
IC405	23318218	IC, μ PC7812H
IC501	B0379435	IC, TA8653N
IC601	B0356190	IC, TA7630P
IC605	23318413	IC, LA4282
IC661	B0383400	IC, TA8710S
IC803	23318411	IC, TEA2164
IC806	23318299	IC, L78MR05-FA
IC807	23318412	IC, TEA5170
ICA01	23318440	IC, M50436-687SP
ICA02	23119182	IC, μ PD6336C
ICA03	23318397	IC, M6M80021P

Location No.	Part No.	Description
ICA12	23119441	IC, LA7910
ICG01	23119092	IC, TDA6600-2
ICG02	B0349250	IC, TA75393S
ICG03	B0470522	IC, TC4052BP
ICH01	23119139	IC, AN5862K
ICV01	B0383505	IC, TA8720AN
Q102	23114691	Transistor, BC557A
Q103	23118980	Transistor, BC337
Q104	23114689	Transistor, BC547A
Q161	A6708871	Transistor, 2SC388ATM
Q162	A6708871	Transistor, 2SC388ATM
Q201	23114689	Transistor, BC547A
Q202	23114689	Transistor, BC547A
Q301	23114632	Transistor, BC547B
Q303B	23035308	Screw, BTB3X8SZN
Q360	23114689	Transistor, BC547A
Q402	A6330069	Transistor, 2SC2482 FA-1
△ Q404	23314375	Transistor, ON4409
Q406	23314229	Transistor, 2SD1378-Q
Q502	23114691	Transistor, BC557A
Q503	23114691	Transistor, BC557A
Q505	23114693	Transistor, BF871
Q506	23114689	Transistor, BC547A
Q508	23114693	Transistor, BF871
Q509	23114689	Transistor, BC547A
Q511	23114693	Transistor, BF871
Q512	23114689	Transistor, BC547A
Q514	23114688	Transistor, BC327
Q515	23114689	Transistor, BC547A
Q604	23114689	Transistor, BC547A
Q606	23114689	Transistor, BC547A
Q607	A6342200	Transistor, 2SC2878-A
Q608	A6342200	Transistor, 2SC2878-A
Q609	23114691	Transistor, BC557A
Q610	A6342200	Transistor, 2SC2878-A
Q611	A6342200	Transistor, 2SC2878-A
Q660	23114689	Transistor, BC547A
Q671	A6708871	Transistor, 2SC388ATM
Q672	A6708871	Transistor, 2SC388ATM
△ Q804	23314547	Transistor, 2SC4199A
Q805	A6533750	Transistor, 2SA1013-O
Q809	23114632	Transistor, BC547B
Q810	A6328333	Transistor, 2SC2383-Y
Q811	23114546	Transistor, BC557B
Q814	A6546310	Transistor, 2SA1297Y
Q815	23114632	Transistor, BC547B
Q816	A6867980	Transistor, 2SD1405-V
Q817	A6321240	Transistor, 2SC2120-Y
QA05	23114689	Transistor, BC547A
QA06	23114691	Transistor, BC557A
QA07	23114689	Transistor, BC547A
QA08	23114691	Transistor, BC557A
QA09	23114689	Transistor, BC547A
QA11	23114689	Transistor, BC547A
QA13	23114689	Transistor, BC547A
QA14	23114689	Transistor, BC547A
QA15(U902)	A6041876	Transistor, 2SK117-GR FA-2
QA15(U903D)	23114689	Transistor, BC547A
QA16	23114689	Transistor, BC547A
QA17	23114689	Transistor, BC547A
QA19	23114689	Transistor, BC547A
QA20	23114689	Transistor, BC547A
QB01	23114689	Transistor, BC547A
QB02	23114689	Transistor, BC547A

Location No.	Part No.	Description
QE10	23114689	Transistor, BC547A
QE11	23114691	Transistor, BC557A
QG05	23114689	Transistor, BC547A
QG07	23114689	Transistor, BC547A
QG09	23114689	Transistor, BC547A
QG10	23114691	Transistor, BC557A
QG14	23114689	Transistor, BC547A
QG15	23114689	Transistor, BC547A
QG16	23114689	Transistor, BC547A
QG18	23114689	Transistor, BC547A
QH02	23114689	Transistor, BC547A
QH03	A6734590	Transistor, 2SC752GTM-Y
QH04	23114689	Transistor, BC547A
QH05	23114689	Transistor, BC547A
QN02	23114691	Transistor, BC557A
QN03	23114691	Transistor, BC557A
QN04	23114689	Transistor, BC547A
QN05	23114689	Transistor, BC547A
QN06	23114689	Transistor, BC547A
QN07	23114689	Transistor, BC547A
QN08	23114689	Transistor, BC547A
QN09	23114689	Transistor, BC547A
QN10	23114689	Transistor, BC547A
QN11	A6041876	Transistor, 2SK117-GR FA-2
QN12	23114689	Transistor, BC547A
QN13	23114689	Transistor, BC547A
QN14	23114689	Transistor, BC547A
QN15	23114689	Transistor, BC547A
QN16	23114689	Transistor, BC547A
QN17	23114689	Transistor, BC547A
QV02	23114691	Transistor, BC557A
QV03	23114689	Transistor, BC547A
QV05	23114691	Transistor, BC557A
QV06	A6342200	Transistor, 2SC2878-A
QV07	A6342200	Transistor, 2SC2878-A
QV08	A6342200	Transistor, 2SC2878-A
QV11	A6342200	Transistor, 2SC2878-A
QV12	A6342200	Transistor, 2SC2878-A
QV14	23114691	Transistor, BC557A
QV15	23114691	Transistor, BC557A
D241	A7150041	Diode, 1SS104
D302	23118479	Diode, BYD33J
D305	23118479	Diode, BYD33J
D314	A7117205	Diode, Zener, 04AZ12X
D315	A7116725	Diode, Zener, 04AZ7.5Z
D320	23115599	Diode, 1N4148
D321	23115599	Diode, 1N4148
D401	A7116925	Diode, Zener, 04AZ9.1Z
D402	A7117715	Diode, Zener, 04AZ20Y
D403	23115603	Diode, Zener, ZPD12
D406	23118479	Diode, BYD33J
D408	23118052	Diode, RU4Z
D409	A7117015	Diode, Zener, 04AZ10Y
D410	A7116815	Diode, Zener, 04AZ8.2Y
D594	23115599	Diode, 1N4148
D595	23115599	Diode, 1N4148
D596	23115599	Diode, 1N4148
D603	23115599	Diode, 1N4148
D604	23115599	Diode, 1N4148
D803	23118173	Diode, RBV-406M-LFA
D807	23118479	Diode, BYD33J
D808	23118479	Diode, BYD33J
D809	23118479	Diode, BYD33J
D810	23118479	Diode, BYD33J

Location No.	Part No.	Description
D811	A7117415	Diode, Zener, 04AZ15Y
D812	23118479	Diode, BYD33J
D813	23118479	Diode, BYD33J
D814	23118479	Diode, BYD33J
D815	23118479	Diode, BYD33J
D816	23118479	Diode, BYD33J
D817	23118451	Diode, RU4A
D818	23118451	Diode, RU4A
D819	23118479	Diode, BYD33J
D821	23115599	Diode, 1N4148
D822	A7275400	Diode, 1S2462
D824	23115599	Diode, 1N4148
D826	23118479	Diode, BYD33J
D828	23118052	Diode, RU4Z
D830	23115599	Diode, 1N4148
D832	A7116715	Diode, Zener, 04AZ7.5Y
D837	23115599	Diode, 1N4148
DA01	23115599	Diode, 1N4148
DA02	23115599	Diode, 1N4148
DA03	23115599	Diode, 1N4148
DA04	23115599	Diode, 1N4148
DA05	23115599	Diode, 1N4148
DA06	23115599	Diode, 1N4148
DA07	23115599	Diode, 1N4148
DA08	23115599	Diode, 1N4148
DA09	23115599	Diode, 1N4148
DA10	23115599	Diode, 1N4148
DA11	23115599	Diode, 1N4148
DA13	23115599	Diode, 1N4148
DA14	23115599	Diode, 1N4148
DA15	23115599	Diode, 1N4148
DA16	23115599	Diode, 1N4148
DA17	23115599	Diode, 1N4148
DA18	23115599	Diode, 1N4148
DA21	23115599	Diode, 1N4148
DA22	23115599	Diode, 1N4148
DA23	23115599	Diode, 1N4148
DA26	23115599	Diode, 1N4148
DA27	23115599	Diode, 1N4148
DA28	23115599	Diode, 1N4148
DA29	23115599	Diode, 1N4148
DA30	23115878	Diode, Zener, μ PC574J
DA31	23115599	Diode, 1N4148
DA32	23115599	Diode, 1N4148
DA35	23115599	Diode, 1N4148
DE11	A7288601	Diode, 1S2186 FA-1
DE12	A7288601	Diode, 1S2186 FA-1
DE13	A7288601	Diode, 1S2186 FA-1
DE40	23118969	Diode (LED), MV57124, Red
DG01	23115599	Diode, 1N4148
DG02	23115599	Diode, 1N4148
DG03	23115599	Diode, 1N4148
DG04	23115599	Diode, 1N4148
DG05	23115599	Diode, 1N4148
DG40	23318436	Diode (LED), MV53124A, Yellow
DG41	23318436	Diode (LED), MV53124A, Yellow
DH01	23115599	Diode, 1N4148
DH02	23115599	Diode, 1N4148
DH03	23115599	Diode, 1N4148
DH04	23115599	Diode, 1N4148
DH05	23115599	Diode, 1N4148
DH06	23115599	Diode, 1N4148

Location No.	Part No.	Description
DH07	23115599	Diode, 1N4148
DH08	23115599	Diode, 1N4148
DH10	A7116215	Diode, Zener, 04AZ4.7Y
DN01	A7288601	Diode, 1S2186 FA-1
DN02	A7288601	Diode, 1S2186 FA-1
DN03	A7116415	Diode, Zener, 04AZ5.6Y
DN04	A7288601	Diode, 1S2186 FA-1
DN05	A7116305	Diode, Zener, 04AZ5.1X
DN06	A7288601	Diode, 1S2186 FA-1
DN07	A7288601	Diode, 1S2186 FA-1
DN08	A7288601	Diode, 1S2186 FA-1
DN09	A7288601	Diode, 1S2186 FA-1
DN11	A7288601	Diode, 1S2186 FA-1
DN12	A7288601	Diode, 1S2186 FA-1
DN13	A7288601	Diode, 1S2186 FA-1
DV01	A7116925	Diode, Zener, 04AZ9.1Z
DV02	A7116815	Diode, Zener, 04AZ8.2Y
MISCELLANEOUS		
△ F801	23144896	Fuse, T2.0A
F801A	23165102	Fuse Clip
K901	23120439	Remote Sensor, IR-9103-K
P003	23161699	Terminal, 4P
P661	23363607	Headphone Jack, 3.5mm
△ P801	23176704	Power Cord
PH01	23365025	21 Pin Connector
PH02	23365025	21 Pin Connector
S202	23145542	Switch, Lever, 1C3P
S301	23145682	Switch, Lever, 1C3P
△ S801	23145434	Switch, Power, 2C2P
SA01	23145428	Switch, Push, 1C1Px4
SA02	23145428	Switch, Push, 1C1Px4
SA03	23145428	Switch, Push, 1C1Px4
SA04	23145428	Switch, Push, 1C1Px4
SA05	23145429	Switch, Push, 1C1Px3
SA06	23145429	Switch, Push, 1C1Px3
SA07	23145429	Switch, Push, 1C1Px3
SV01	23365506	Jack, S-VHS
SV02	23365351	Jack, Phono, 3P
△ V901A	23902353	Socket, CRT, 10P
W201	23250877	Coil, Delay Line, TRF2032
W661	23151207	Speaker, SPK1275, 100x100mm, 4 ohm
W662	23151300	Speaker, SPK1191, 40x40mm, 140 ohm
W663	23151207	Speaker, SPK1275, 100x100mm, 4 ohm
W664	23151300	Speaker, SPK1191, 40x40mm, 140 ohm
X401	23153886	Ceramic Resonator, 50kHz, TCR1012
X501	23153979	Crystal, 4.43MHz
X502	23250950	Coil, 1H-Delay Line, DL7 11
X503	23153961	Crystal, 3.58MHz
Z101	A5611197	PIF SAW Filter, F1038F
Z102	23153725	Ceramic Resonator, TCF1043
Z103	23107911	Ceramic Video Trap, 5.5 to 6MHz, TCF1019
Z104	23107658	Ceramic Video Trap, 5.74MHz, TCF1052
Z201	23107925	Ceramic Video Trap, 6.5MHz, TCF1013
Z601	A5615257	SIF SAW Filter, 32.7MHz, F1808D

Location No.	Part No.	Description
Z661	23107855	Ceramic Filter, 5.5MHz, TCF1031
Z662	23107948	Ceramic Filter, 6.0MHz, SFE6.0MBF
Z663	23107949	Ceramic Filter, 6.5MHz, SFE6.5MBF
Z664	23153900	Ceramic Resonator, 500kHz, TCR1010
Z666	23107948	Ceramic Filter, 6.0MHz, SFE6.0MBF
ZA01	23153845	Ceramic Resonator, 4MHz, TCR1015
ZA02	24094651	Capacitor Block, 100pFx4, 50V
ZV01	23107849	Ceramic Video Trap, 4.43MHz, TCF1032
ZV02	23107787	Ceramic Video Trap, 3.58MHz, TCF1023

PC BOARD ASSEMBLIES

U902	23335589	Main Board, PW9124
U903A	23335749	Power Board, PW9202-1
U903B	23335750	MPX Board, PW9202-2
U903C	23335751	CRT Drive Board, PW9202-3
U903D	23335752	Tone Board, PW9202-4

PICTURE TUBE

⬆ V901	23312067	Picture Tube, A51EBV12X01
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TUNER

H001	23121612	Tuner, VHF/UHF, EF442A
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REMOTE HAND SET PARTS

K902	23120478	Remote Hand Unit, CT9357
AT01	23300909	Upper Case
AT02	23300919	Lower Case
AT03	23300920	Battery Cover
AT04	23300921	Filter
ST01	23300910	Rubber Sheet
UT01	23335516	PC Board, PW6974
ZT01	23153736	Ceramic Resonator, SCB455EB20

[illegible]

TERMINAL VIEW OF TRANSISTORS

- ① BC327
BC337
BC547A
BC547B
BC547C
BC557A
BC557B
BC556A



- ② 2SK30ATM
2SK117



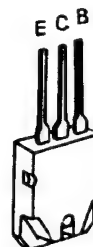
- ③ BD202



- ④ BF871
2SD553
2SC1569



- ⑤ 2SC3678
2SC3182N



- ⑥ 2SD1427
2SD1432



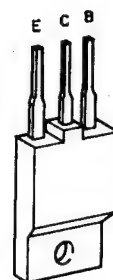
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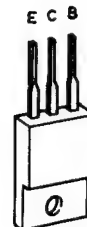
- ⑧ 2SC388ATM
2SA1015
2SC1959
2SA562TM



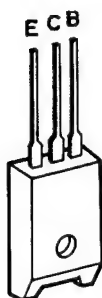
- ⑨ 2SD1548



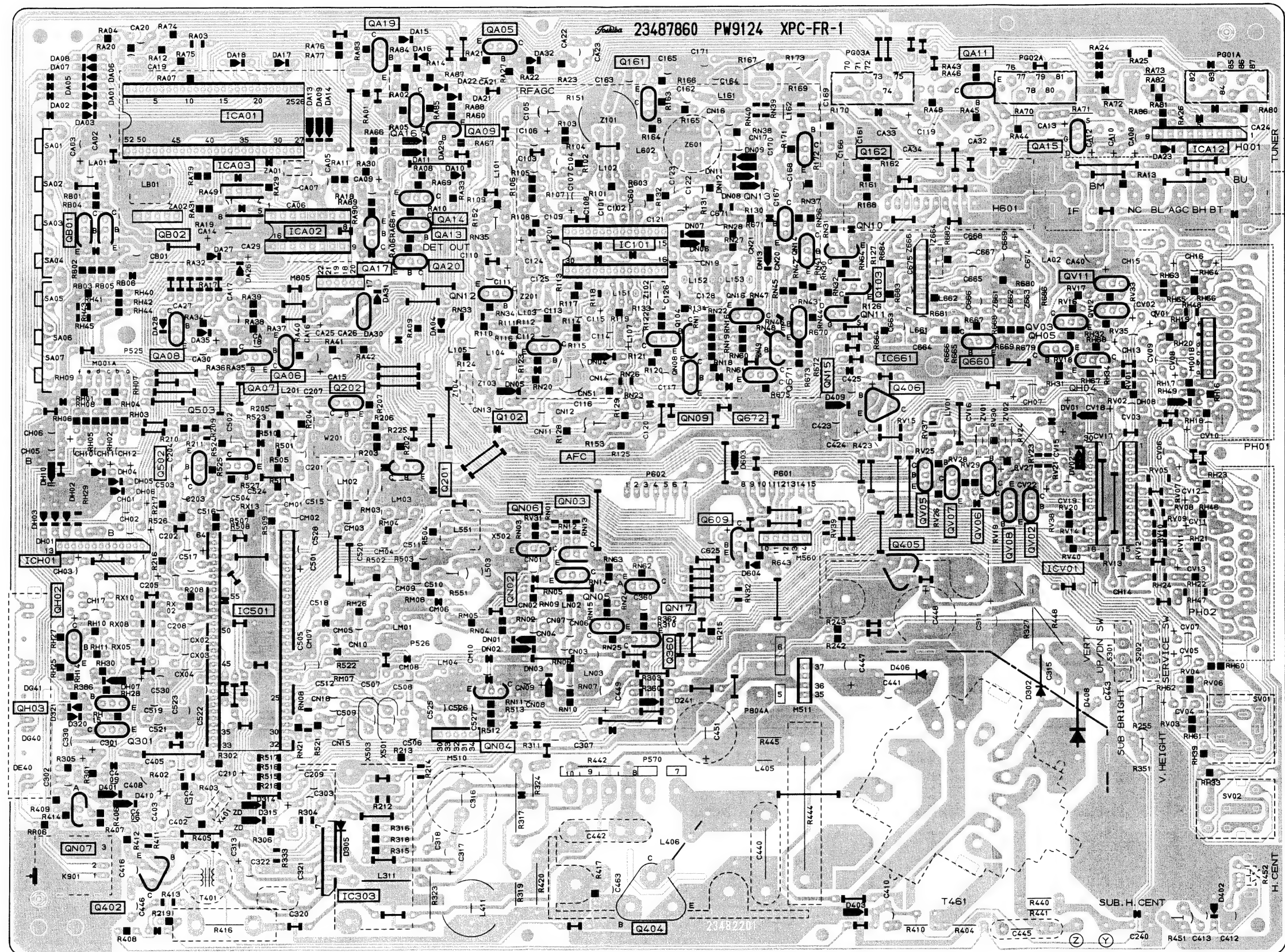
- ⑩ 2SC2023



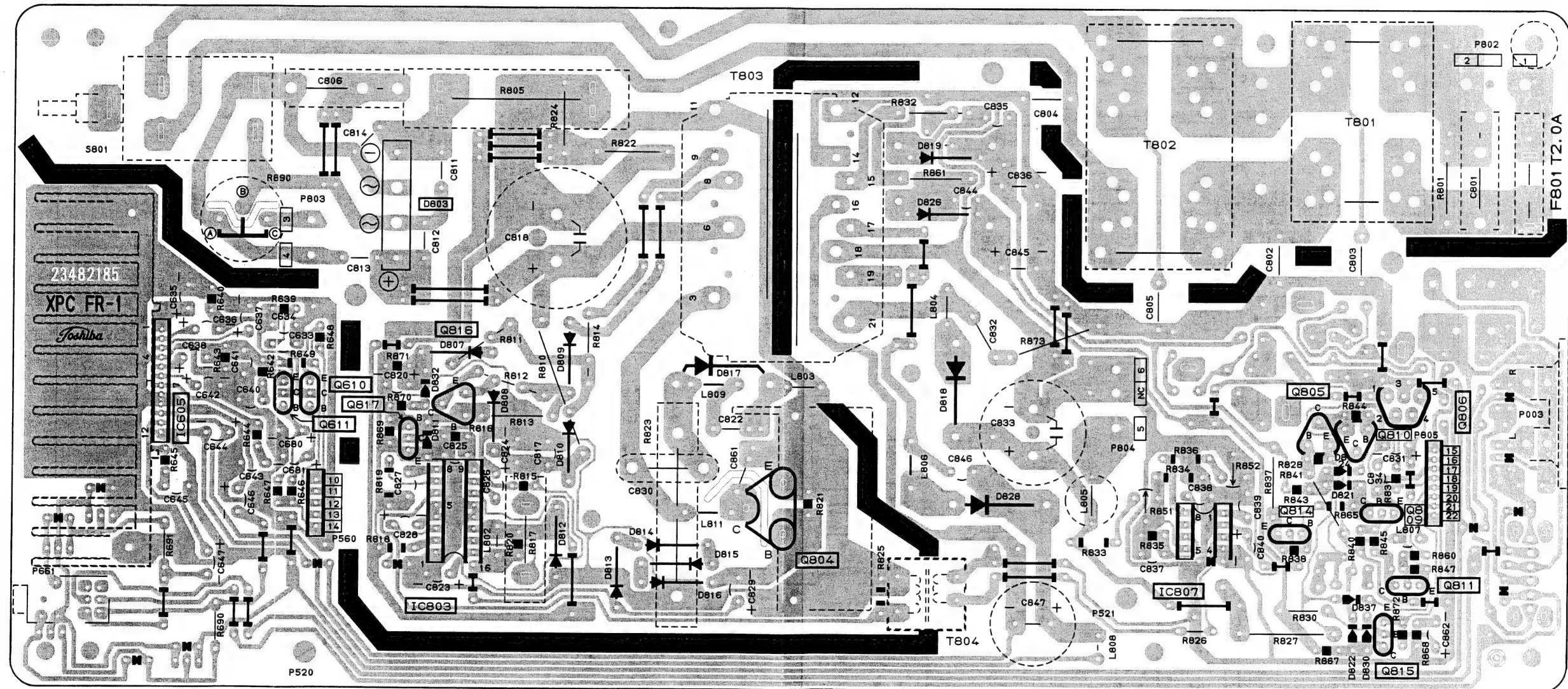
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MAIN BOARD PW9124
BOTTOM (FOIL) SIDE



BOTTOM (FOIL) SIDE



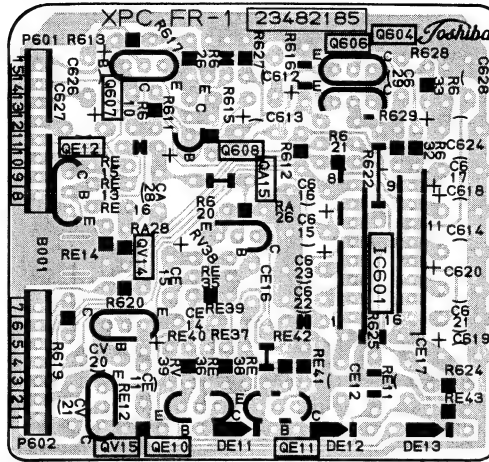
BOTTOM (FOIL) SIDE



BOTTOM (FOIL) SIDE



tone CONT. BOARD PW9202-4
bottom (FOIL) SIDE



218S9F

SCHEMATIC DIAGRAM (1/2)

IMPORTANT SAFETY NOTICE

Component marked with the International Hazard Symbol must, if changed, be replaced by an approved type and must be mounted as the original. This will ensure that the safety standards adhered to during manufacture will be maintained following any servicing procedure.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (—) or ground lead of instruments should be connected to the ground marked (⊥) in the schematic on checking Non-isolated circuit surrounded by mark but should be connected to the points marked (≡) on checking isolated circuit.
3. The voltage readings may vary as much as $\pm 20\%$.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast, Brightness and Colour controls are set near to their mid-positions.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH , and the values less than 1 in H.

GROUNDING SYMBOL

1. \perp : Non isolated ground, \equiv : Isolated ground.

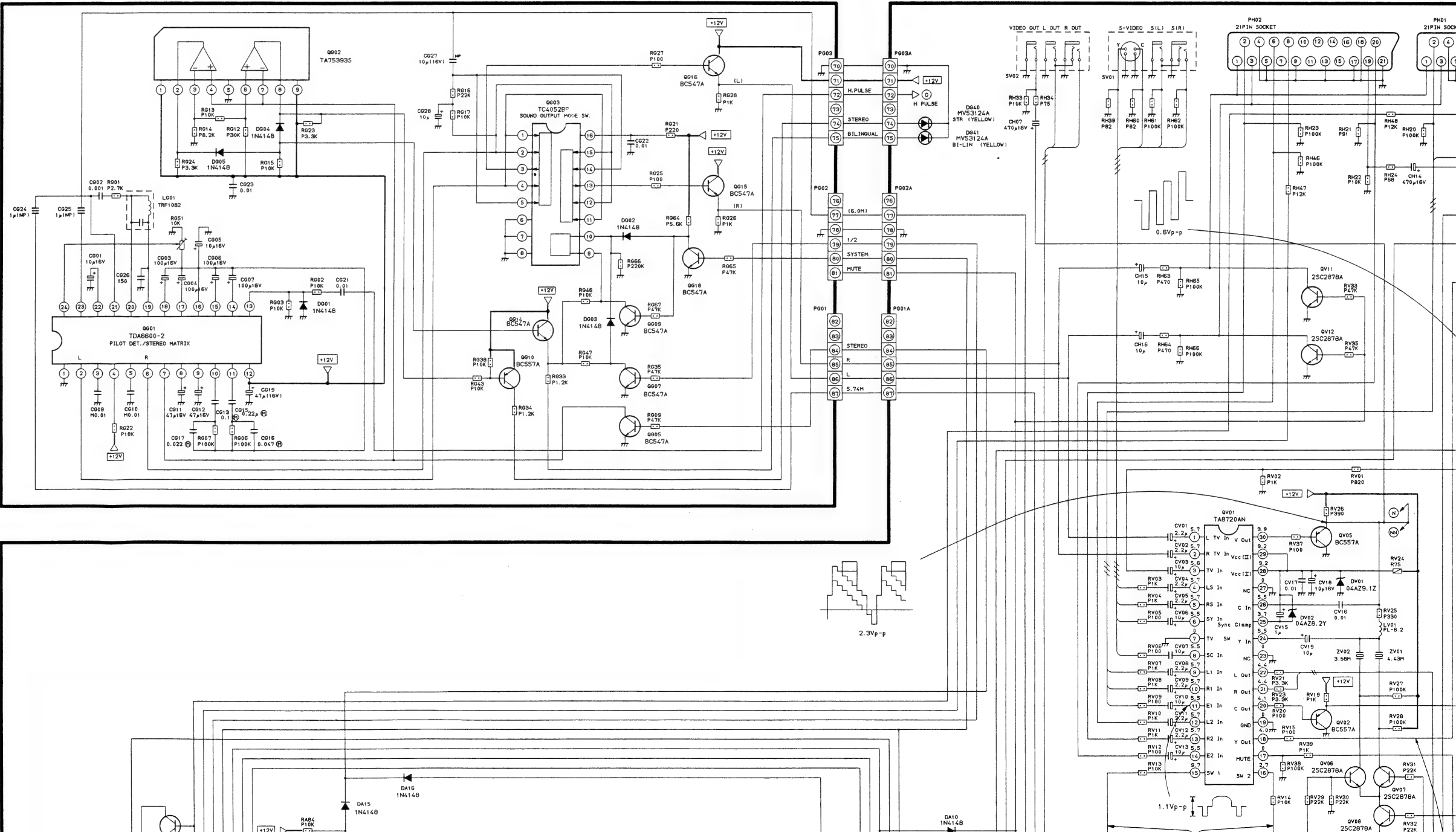
RESISTOR

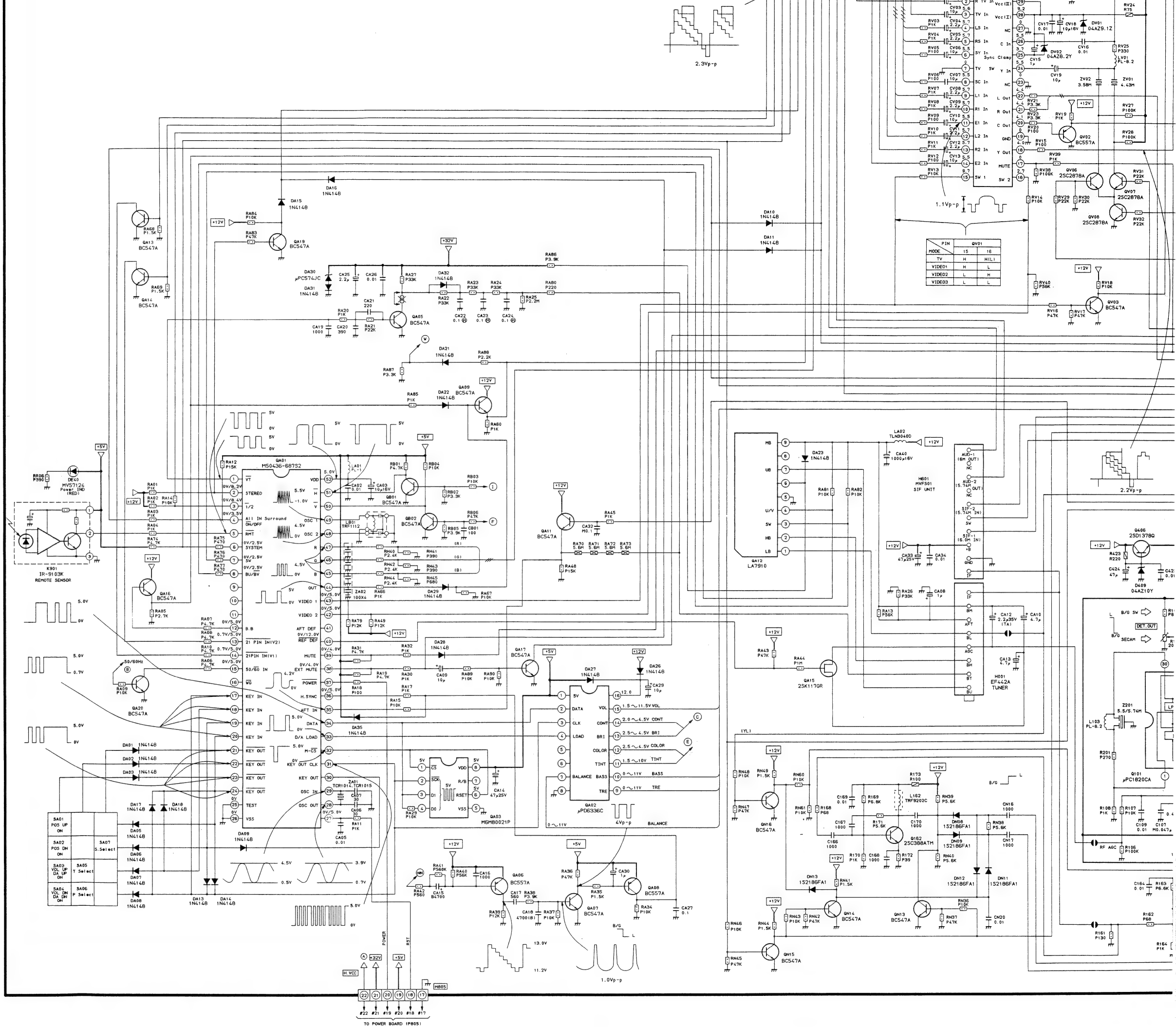
Prefixed to

Carbon
Oxide
Ins. Coat
Wirewound
Cement coated
Fused

U903B MPX BOARD PW9202-2

U902A MAIN BOARD PW9124





RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Suffixes to values:

TOLERANCE	MARK
$\pm 1\%$	(F)
$\pm 2\%$	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

WATTAGE	MARK
1/6W	
1/4W	
1/2W	
1W	
2W	

WATTAGE	MARK
3W	
5W	
10W	
15W	
20W	
25W	

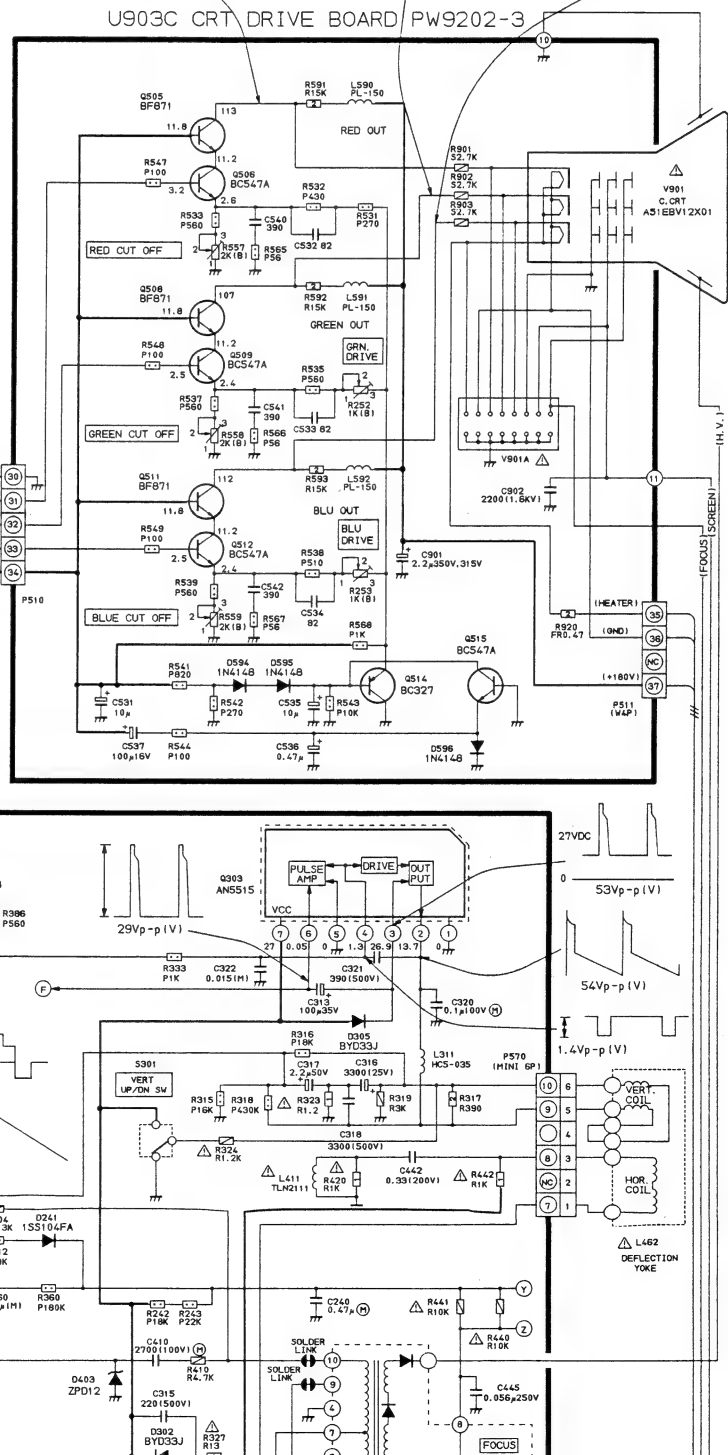
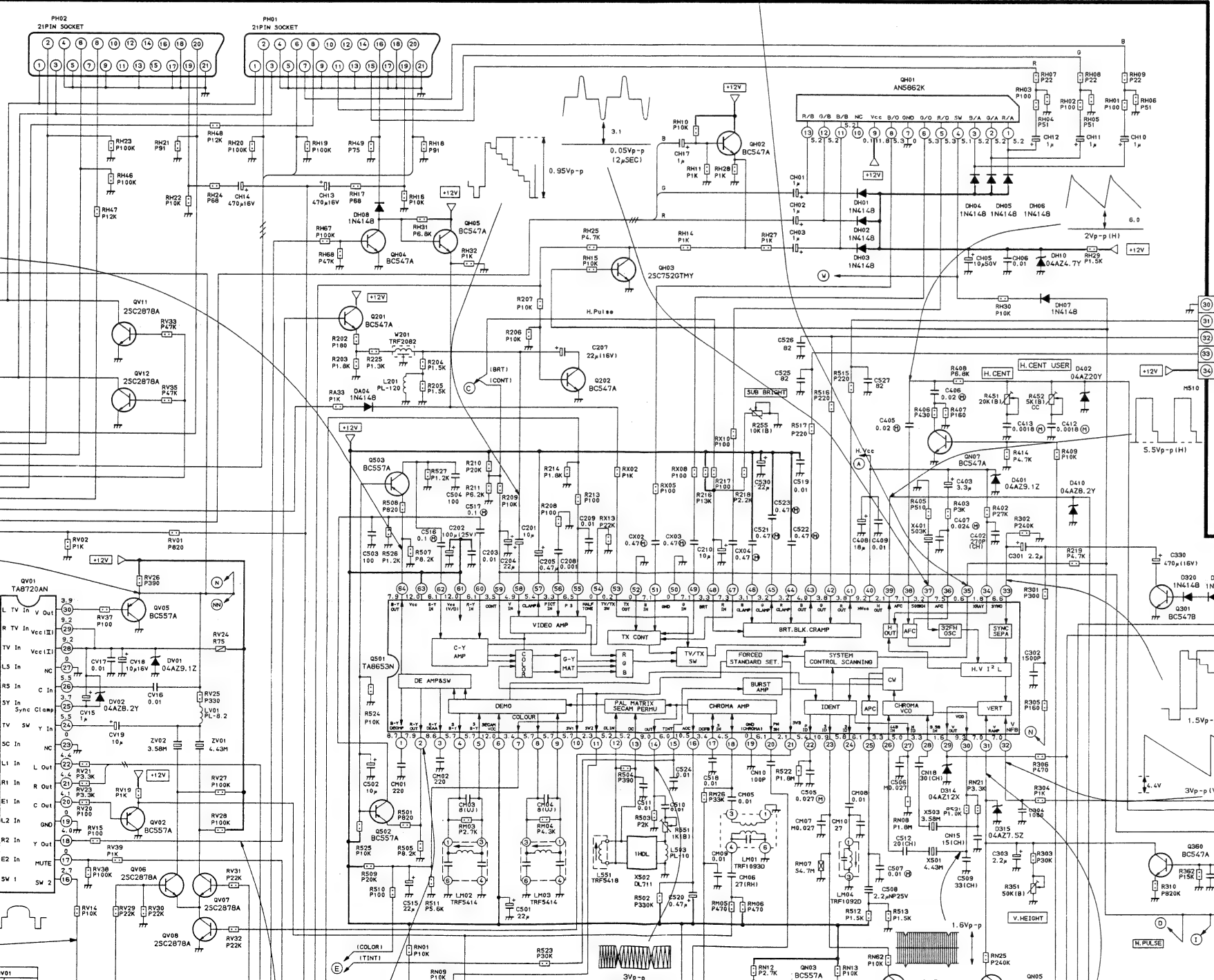
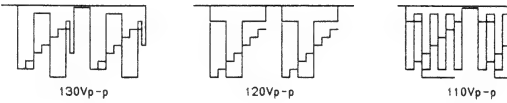
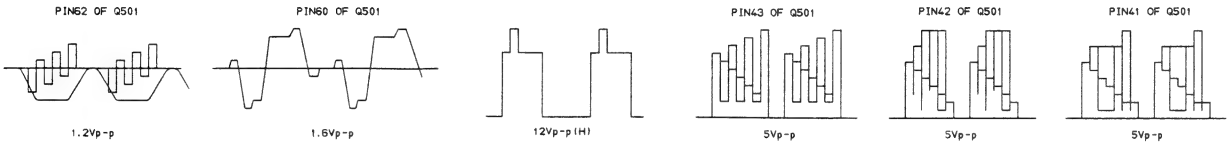
CAPACITORS

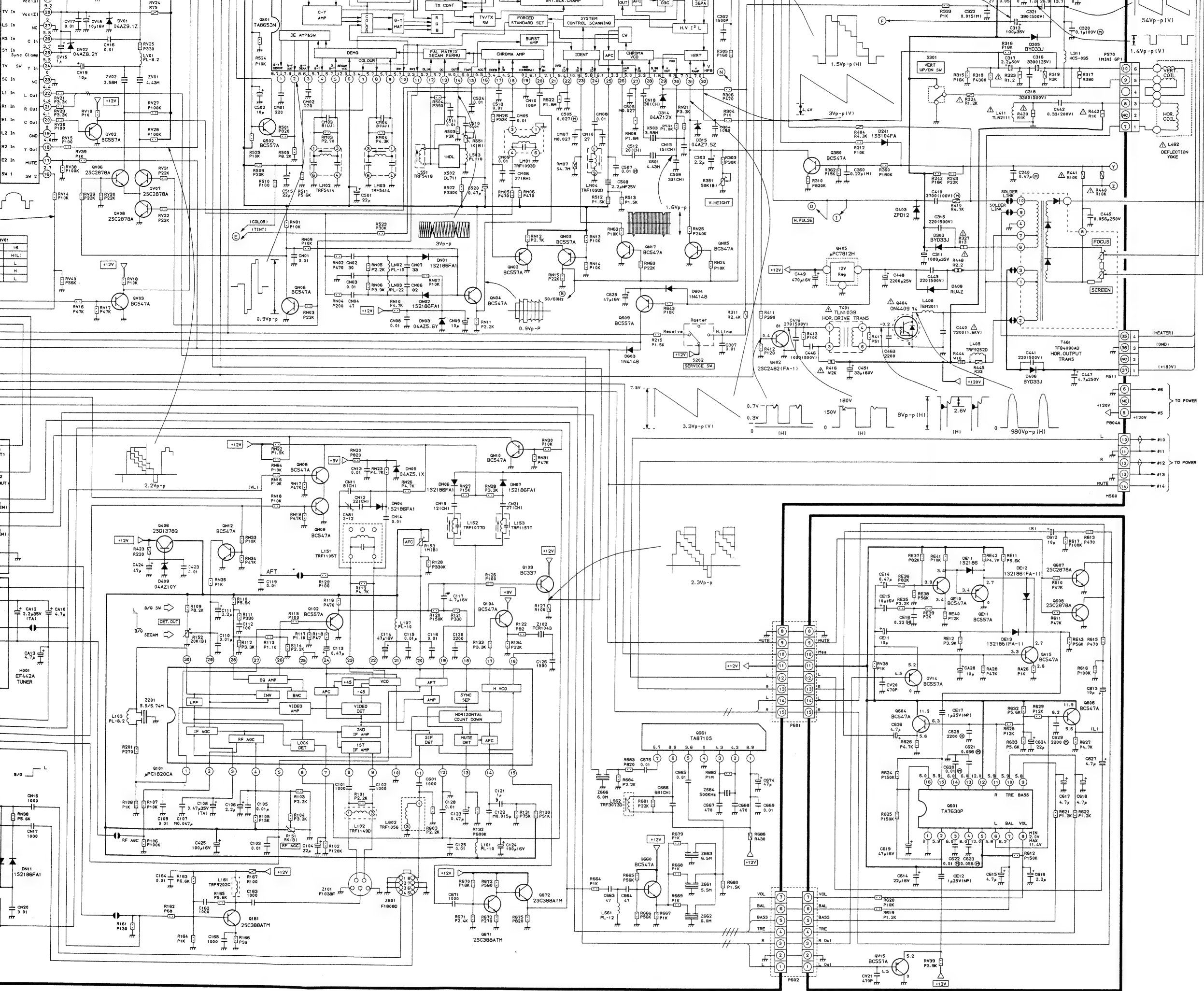
Rating Markings:

Type	Mark
Ceramic Disc 50V Only	
Electrolytic	
Electrolytic Non-Polar	
Variable Capacitor	
Other	

are expressed in
are expressed in

1 AUDIO OUT (R)	11 GREEN IN
2 AUDIO IN (R)	12 NC
3 AUDIO OUT (L)	13 RED EARTH
4 AUDIO EARTH	14 NC
5 EARTH	15 RED IN
6 AUDIO IN (L)	16 RAPID BLANKING
7 BLUE IN	17 VIDEO EARTH
8 EXT/TV	18 RAPID BLK EARTH
9 GREEN EARTH	19 VIDEO OUT
10 NC	20 VIDEO IN
	21 SHIELD EARTH





U903D TONE CONT. BOARD PW9202-4

218S9F

SCHEMATIC DIAGRAM (2/2)

IMPORTANT SAFETY NOTICE

Component marked with the International Hazard Symbol must, if changed, be replaced by an approved type and must be mounted as the original. This will ensure that the safety standards adhered to during manufacture will be maintained following any servicing procedure.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (—) or ground lead of instruments should be connected to the ground marked (⊥) in the schematic on checking Non-isolated circuit surrounded by mark but should be connected to the points marked (≡) on checking isolated circuit.
3. The voltage readings may vary as much as $\pm 20\%$.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast, Brightness and Colour controls are set near to their mid-positions.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH , and the values less than 1 in H.

GROUNDING SYMBOL

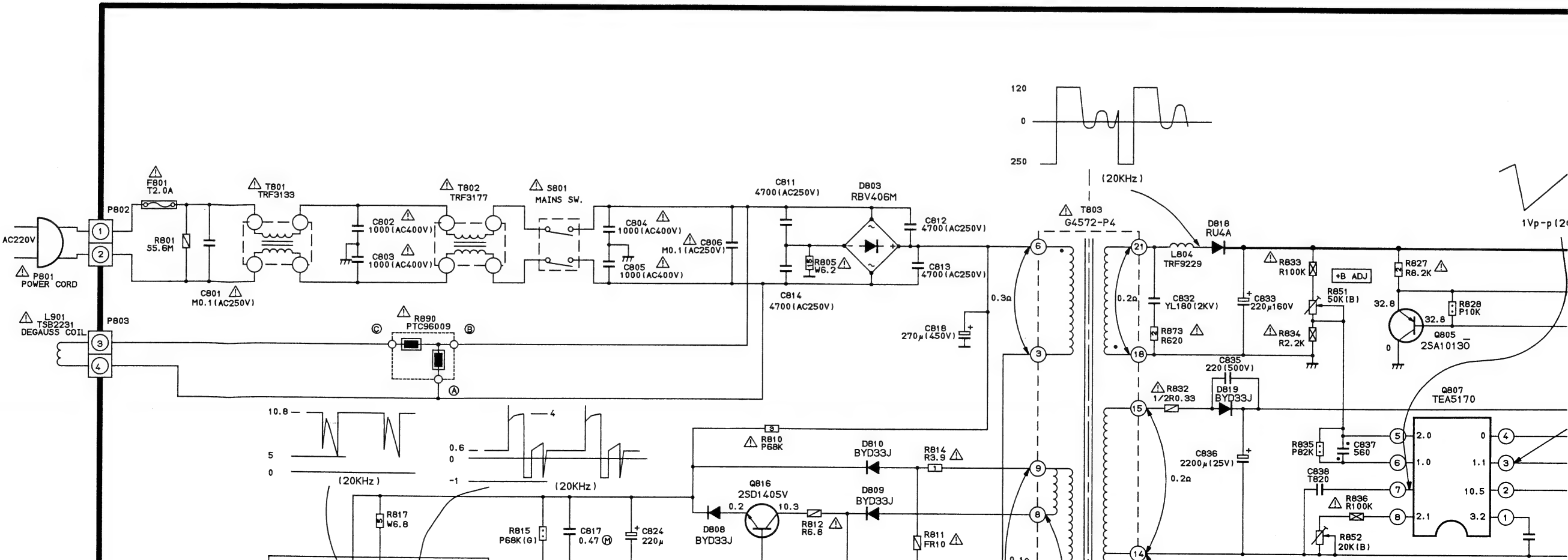
1. ⊥: Non isolated ground, ≡: Isolated ground.

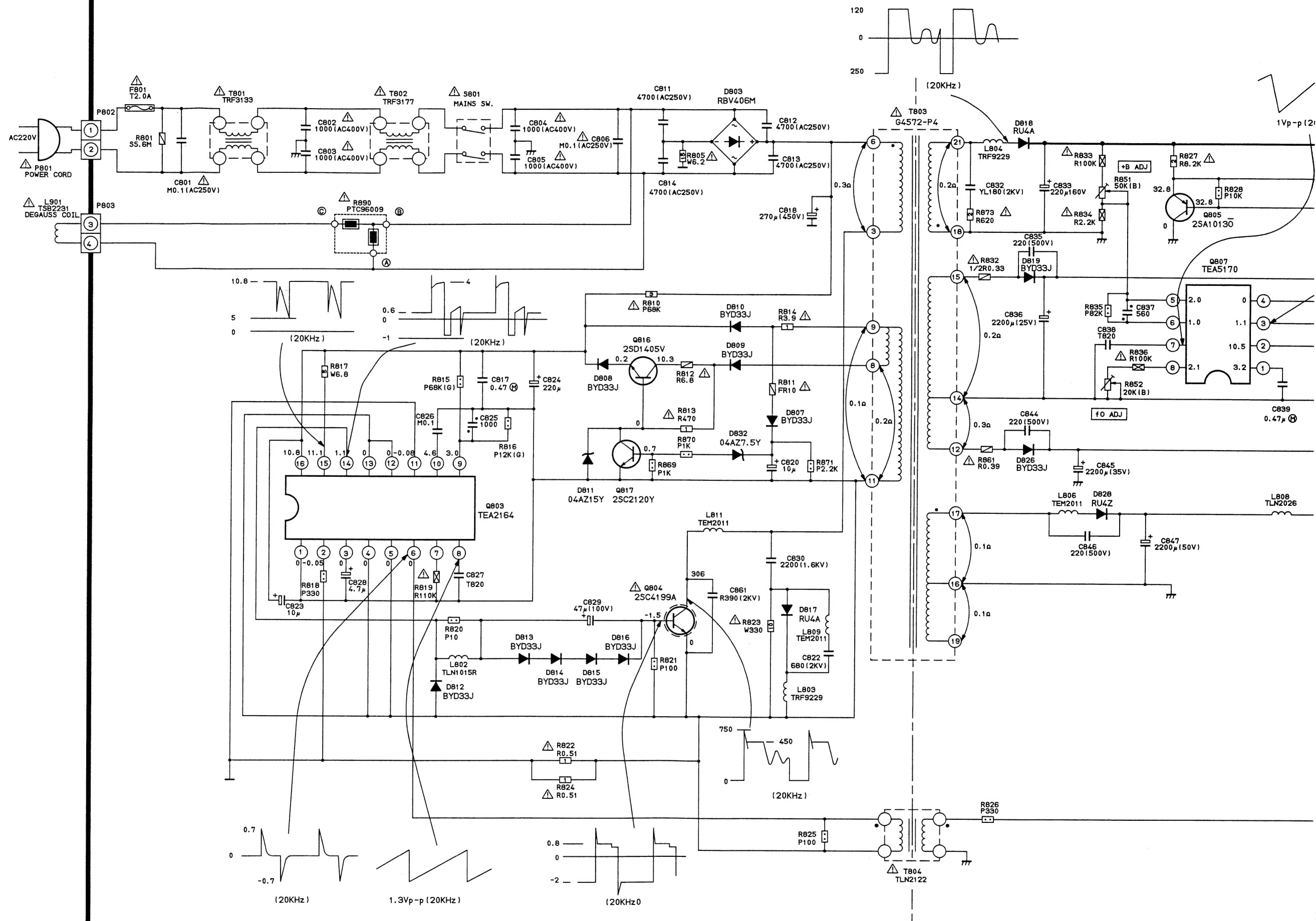
RESISTOR

Prefixed to value

TY
Carbon
Oxide M
Ins. Carb
Wire W
Cement co
Fusibl

U902A POWER/AUDIO BOARD PW9202-1





RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Suffixes to values:

TOLERANCE	MARK
$\pm 1\%$	(F)
$\pm 2\%$	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

WATTAGE	MARK
1/6W	
1/4W	
1/2W	
1W	
2W	

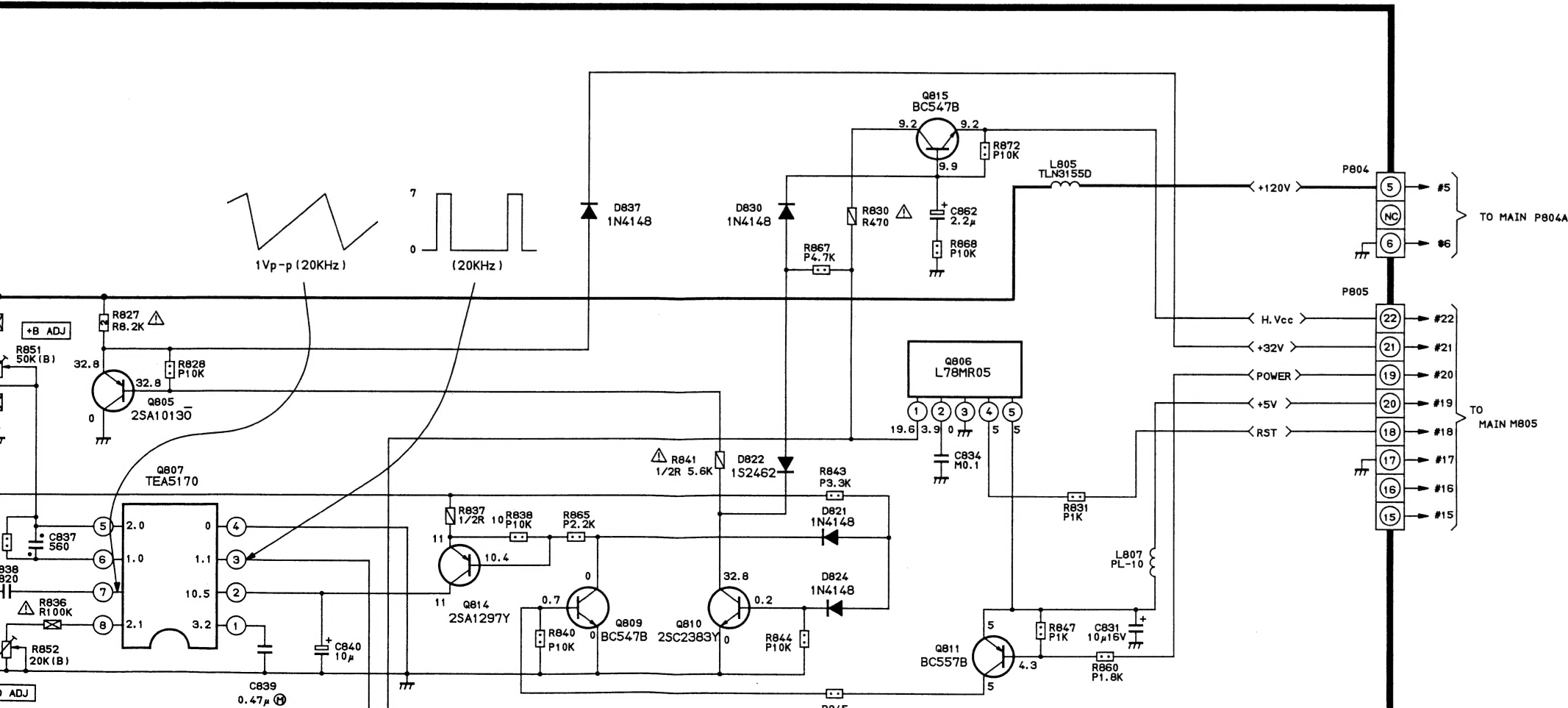
WATTAGE	MARK
3W	
5W	
10W	
15W	
20W	
25W	

CAPACITORS

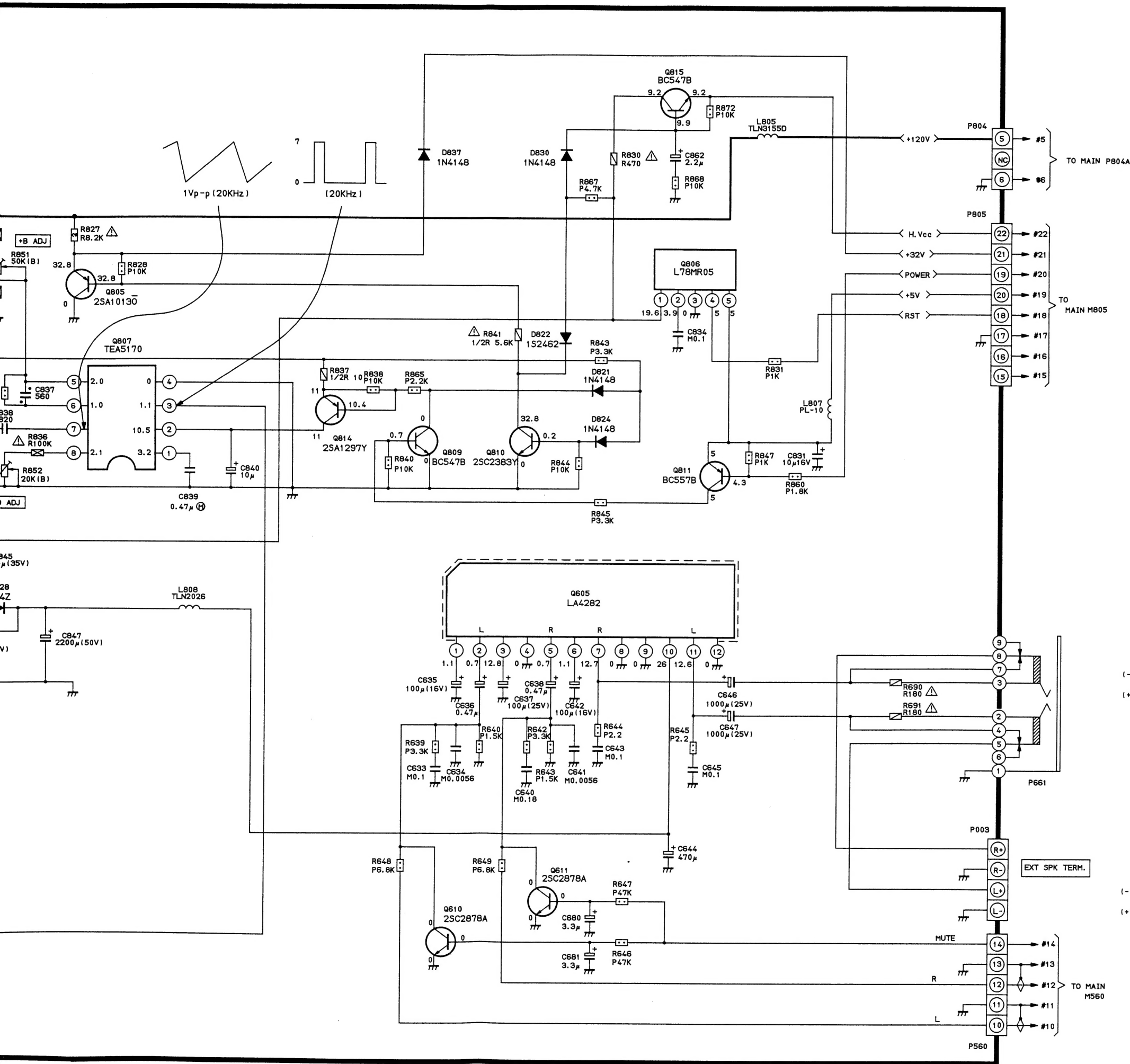
Rating Markings:

Type	Mark
Ceramic Disc 50V Only	
Electrolytic	
Electrolytic Non-Polar	
Variable Capacitor	
Other	

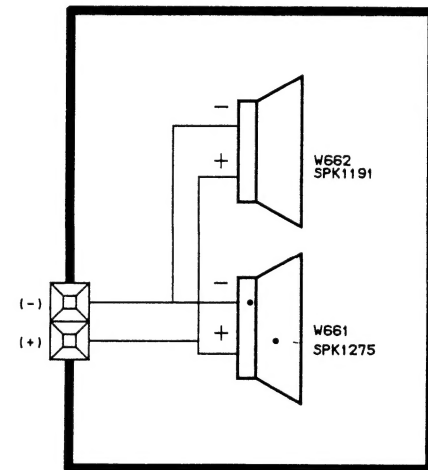
re expressed in
re expressed in



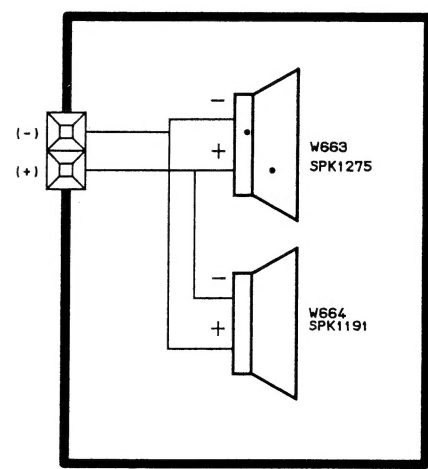
SPK BOX (R)



SPK BOX (R)



SPK BOX (L)



TOSHIBA CORPORATION

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105, JAPAN